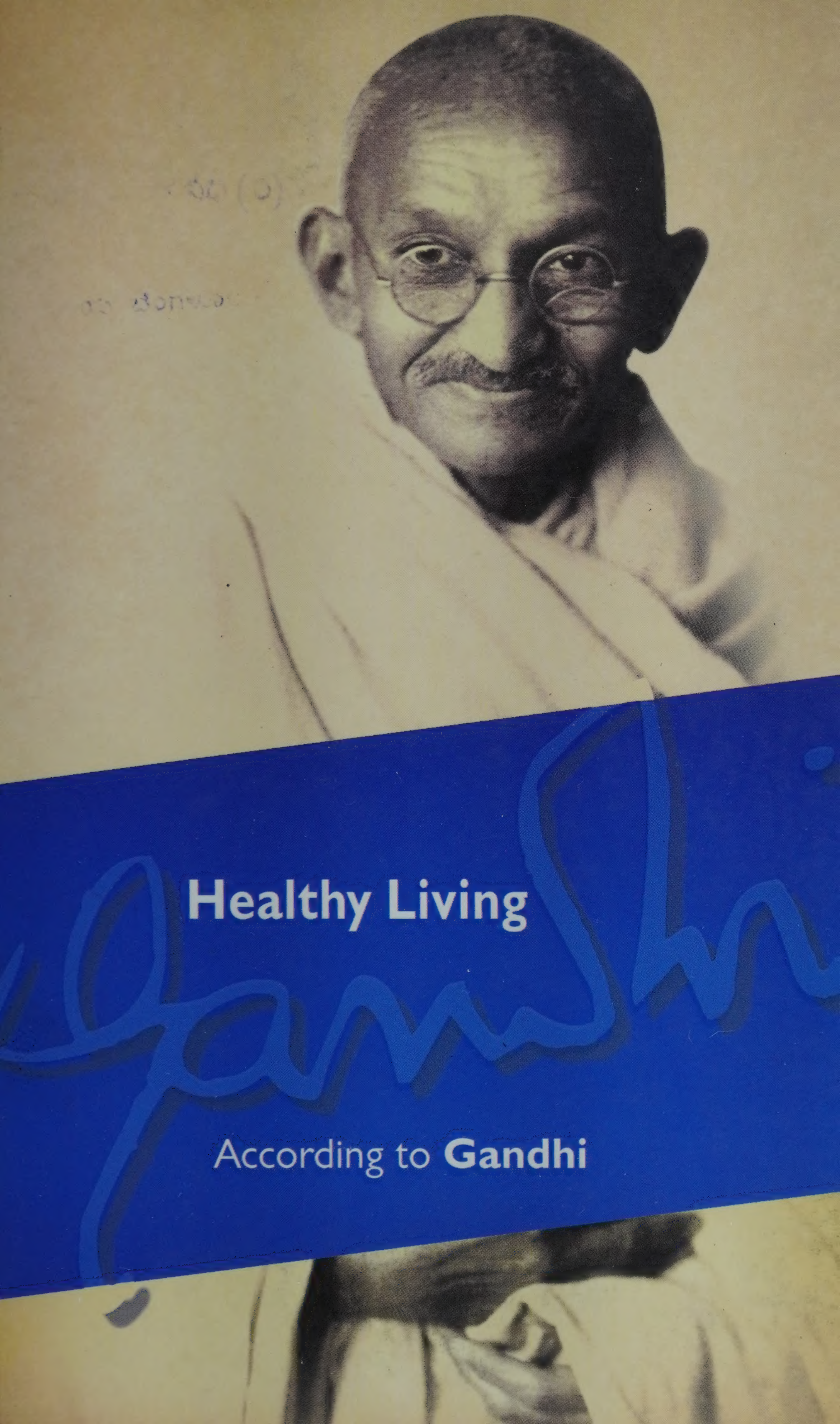
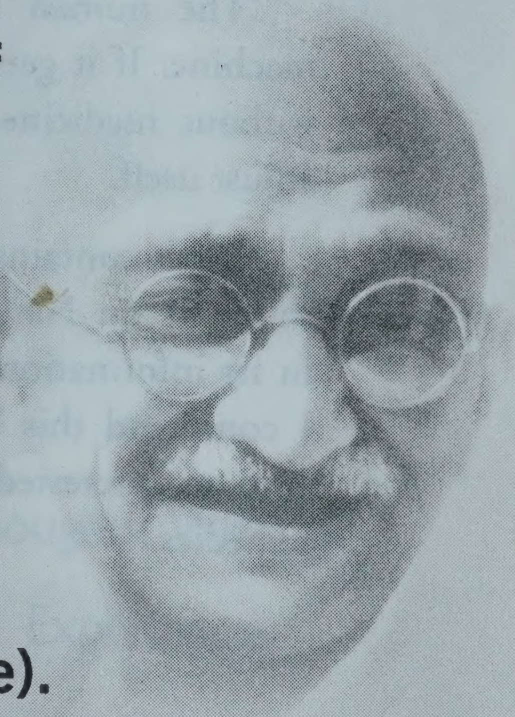


Healthy Living

According to **Gandhi**

I do not pretend that the facts mentioned by me have not been said before. But my readers will find here in a nutshell the substance of my studies of several books on the subject and my conclusions after a series of careful experiments (in nature cure).



Acclaim

'He (Gandhi) believed that human body, mind and spirit could be maintained in a state of perfect health by observance of simple rules. He attempted to discover causes of ordinary ill health and improvised simple remedies of Nature.

'The human body is a wonderful and perfect machine. If it gets out of order, it can set itself right without medicine, provided it is given a chance to adjust itself.

'Book contains a valuable collection of Gandhiji's thoughts on Nature Cure etc. and is indeed as rich in its information as it is constructive in its outlook. I commend this book for serious study by all those who are interested in cure of ailments through natural remedies.'

Morarji Desai
Former Prime Minister of India
November 30, 1954

Healthy Living

According to **Gandhi**

Thoughts, Writings,
Experiences
and
Conclusions

Orient
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Subject: Health & Fitness

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Editor's Note

It may come as a surprise to most that Gandhi was something of an authority on the subject of health and healthy living. Few of us know that he started writing on health related topics as early as 1906 when he was in South Africa and almost all his writings were published in *Indian Opinion.* His original book on health was first published in Gujarati and later translated into several Indian languages. The English edition was published under the title *A Guide to Health* in 1921, and subsequently in several European languages.

The focus of his writings was on understanding our body, its needs and by treating it as a sacred temple of God.

> 'There is nothing so closely connected with us as our body, but there is also nothing perhaps of which our ignorance is so profound or our indifference so complete.
>
> It is the duty of every one of us to get over this indifference. Everyone should regard it as his bounden duty to know something of the fundamental facts concerning his body.'

His total belief in nature and nature-aided healing is reflected repeatedly in his writings.

> '...It is far easier and safer to prevent illness by observance of the laws of health than to set about curing the illness which has been brought on by our own ignorance and carelessness. Hence is the duty of all thoughtful men to understand aright the laws of health.'

Reflecting on the success of his writings on healthy living, from his confinement by the British at the Aga Khan Palace, Yervada, in 1942 he wrote,

> '...(my book, *A Guide to Health*) became the most popular of all my writings. I have never been able to understand the reason for this popularity.'

This book is a discerning selection of his writings and talks on health, healthy living and natural healing written from 1906 to 1942-43. Some of the articles included in this volume were not authored by Gandhi but were published by him in *Harijan* because he believed that they reflected his views and beliefs.

The editors have meticulously sifted through thousands of pages of Gandhi's writings to put together this slim volume of the best of his writings on health and healthy living. The issues he discussed and the points he emphasised remain as relevant and critical today as they were when he wrote.

In an effort to retain the essence of his thinking and make it more readable, the original text has been respectfully edited at places. However every effort has been made to be as close to the original as possible.

Editor

Contents

Introduction
Preface
Translator's Note

Part 1 : Human Body

1. Human Body / 19
2. Air / 23
3. Water / 26
4. Food / 30
5. Salt and Other Condiments / 40
6. Tea, Coffee and Cocoa / 42
7. Intoxicants / 44
8. Tobacco / 47
9. Vitamins / 49
10. Dress / 57
11. Exercise / 60

Part 2 : Natural Therapeutics

12. Precautions Against Ills of the Season / 67
13. Natural Therapeutics / 69
14. Earth / 71
15. Water / 74
16. Akash (Ether) / 82

17. Sun / 86
18. Air / 88

Part 3 : My Experiments with Nature Cure

19. Faith on Its Trial / 91
20. Experiments in Earth and Water Treatment / 94
21. Treating Ramdas' Fractured Arm / 97
22. How I Treated Kasturba's Haemorrhage / 99
23. Saved by Ice Doctor / 101
24. Care of the Child / 104
25. Burns and Scalds / 107
26. Fever and Its Cure / 109
27. Constipation, Dysentery, Gripes and Piles / 112

Part 4 : Food and Diet Reform

28. Healthy Diet / 117
29. What and How Much to Eat? / 119
30. Disease and its Cure / 123
31. Avoid Wrong Combinations / 125
32. Are you Acidic? / 128
33. Polished vs. Unpolished Rice / 131
34. Wheat / 133
35. Soya Beans / 134
36. Plea for more Fruits / 139
37. The Merits of *Amla* / 142
38. Nira — A Nutritious Beverage / 143
39. Cow's Milk vs. Buffalo's / 145
40. Skimmed Milk and Buttermilk / 148
41. Green Leaves / 151

Conclusion
Bibliography

Introduction

During the 21 years (1893-1914) he spent in South Africa Gandhi often wrote articles on health related subjects which were published in the *Indian Opinion,* a newspaper established by him in 1903. These articles were later published in the form of a book under the title *A Guide to Health.* The book was translated into several languages, including English which was published in 1921. The introduction to the English edition is reproduced below. It is in Gandhi's own words.

— *Editor*

For more than twenty years I have been paying special attention to the question of Health. While in England, I had to make my own arrangements for food and drink, and I can say, therefore, that my experience is quite reliable. I have arrived at certain definite conclusions from that experience, and these I now set down for the benefit of my readers.

As the familiar saying goes, 'Prevention is better than cure.' It is far easier and safer to prevent illness by the observance of the laws of health than to set about curing the illness which has been brought on by our own ignorance and carelessness. Hence is the duty of all thoughtful men to understand aright the laws of health.

The object of the following pages is to give an account of these laws. We shall also consider the best methods of cure for some of the most common diseases.

As Milton says, the mind can make a hell of heaven or a heaven of hell. So heaven is not somewhere above the clouds, and hell somewhere underneath the earth! We have this same idea expressed in the Sanskrit saying,

Mana evam manushayanam karanam bandha mokshayoh

Man's captivity or freedom is dependent on the state of his mind. From this it follows that whether a man is healthy or unhealthy depends on him. Illness is the result not only of our actions but also of our thoughts. As has been said by a famous doctor, more people die for fear of diseases than out of those diseases themselves.

Ignorance is one of the root-causes of disease. Very often, out of ignorance, we get bewildered at the most ordinary diseases, and in our anxiety to get better, we simply make matters worse. Our ignorance of the most elementary laws of health leads us to adopt wrong remedies or drives us into the hands of the veriest quacks.

How strange (and yet how true) it is that we know much less about things near at hand than things at a distance. We know hardly anything of our own village, but we can give by rote the names of the rivers and mountains of England! We take so much trouble to learn the names of the stars in the sky, while we hardly think it worthwhile to know the things in our own homes! We never care a jot for the splendid pageantry of Nature before our very eyes, while we are so anxious to witness the puerile mummeries of the theatre!

In the same way, we are not ashamed to be ignorant of the structure of our body, of the way in which the bones and muscles grow, how the blood circulates and is rendered impure, how we are affected by evil thoughts and passions, how our mind travels over illimitable spaces and times while the body is at rest, and so on. There is nothing so closely connected with us as our body, but there is also nothing perhaps of which our ignorance is so profound or our indifference so complete.

It is the duty of every one of us to get over this indifference. Everyone should regard it as his bounden duty to know something of the fundamental facts concerning his body. This kind of instructions should indeed be made compulsory in our schools. At present, we know not how to deal with the most ordinary scalds and wounds; we are helpless if a thorn runs into our foot; we are beside ourselves with fright and dismay if we are bitten by an ordinary snake! Indeed, if we consider the depth of our ignorance in such matters, we shall have to hang our heads in shame. To assert that the average man cannot be expected to know these things is simply absurd. The following pages are intended for such as are willing to learn.

~

I do not pretend that the facts mentioned by me have not been said before. But my readers will find here in a nutshell the substance of several books on the subject. I have arrived at my conclusions after studying these books, and after a series of careful experiments. Moreover, those who are new to this subject will also be saved the risk of being confounded by the conflicting views of writers of such books. For instance, one writer says, that hot water is to be used under certain circumstances while another writer says that, exactly under the same circumstances, cold water is to be used. Conflicting views of this kind have been carefully considered by me, so that my readers may rest assured of the reliability of my own views.

We have got into the habit of calling in a doctor for the most trivial diseases. Where there is no regular doctor available, we take the advice of mere quacks. We labour under the fatal delusion that no disease can be cured without medicine. This has been responsible for more mischief to mankind than any other evil. It is, of course, necessary that our disease should be cured, but they cannot be cured by medicines. Not only are medicines merely useless, but at times even positively harmful. For a diseased man to take drugs and medicines would be as foolish as to try to cover up the filth that has accumulated in the inside of the house. The more we cover up the filth, the more rapidly does putrefaction go on. The same is the case with the human body.

Illness or disease is only Nature's warning that filth has accumulated in some portion or other of the body; and it would surely be the part of wisdom to allow Nature to remove the filth, instead of covering it up by the help of medicines. Those who take medicines are really rendering the task of Nature doubly difficult. It is, on the other hand, quite easy for us to help Nature in her task by remembering certain elementary principles — by fasting, for instance, so that the filth may not accumulate all the more, and by vigorous exercise in the open air, so that some of the filth may escape in the form of perspiration. And the one thing that is supremely necessary is to keep our minds strictly under control.

We find from experience that, when once a bottle of medicine gets itself introduced into a home, it never thinks of going out, but only goes on drawing other similar bottles in its train. We come across numberless human beings who, in spite of their pathetic devotion to medicines, are afflicted by some disease or other all through their lives. They are today under the treatment of this doctor, tomorrow of that. They spend all their life in a futile search of a doctor who will cure them for good.

As the late Justice Stephen (who was for some time in India) said, it is really astonishing that drugs of which so little is known should be applied by doctors to bodies of which they know still less. Some of the greatest doctors of the West themselves have now come to hold this view. Sir Astley Cooper, for instance, admits that the 'science' of medicine is mostly mere guesswork; Dr. Baker and Dr. Fran hold that more people die of medicines than of disease; and Dr. Masongood even goes to the extent of saying that more men have fallen victims to medicine than to war, famine and pestilence combined!

It is also a matter of experience that diseases increase in proportion to the increase in the number of doctors in a place. The demand for drugs has become so widespread that even the meanest papers are sure of getting advertisements of quack medicines, if of nothing else. In a recent book on the Patent Medicines we are told that the fruit-salts and syrups, for which we pay from Rs. 2 to Rs. 5, cost to their manufacturers only from a quarter of an *anna* to one *anna!* No wonder, then, that their compositions should be so scrupulously kept a secret.

We will, therefore, assure our readers that there is absolutely no necessity for them to seek the aid of doctors. To those, however, who may not be willing to boycott doctors and medicines altogether, we will say, 'As far as possible, possess your souls in patience, and do not trouble the doctors. In case you are forced at length to call in the aid of a doctor, be sure to get a good man; then, follow his directions strictly, and do not call in another doctor, unless by his own advice. But remember, above all, that the curing of your disease does *not* rest ultimately in the hands of any doctor.'

Mohandas Karamchand Gandhi

Preface

Following the launch of Quit India movement in 1942 Gandhi was arrested and interned at Aga Khan Palace in Yeravda, near Pune, by the British from August 9, 1942 to May 6, 1944. During this period he made changes in *A Guide to Health* and gave it a new title — *Key to Health.* The Preface he wrote for the new edition is reproduced below.

— *Editor*

For the benefit of the readers of the *Indian Opinion* (South Africa), I wrote a few articles under the heading *Guide to Health* in or about the year 1906. These were later published in book form. I found that it was known to the Indian public. But copies were not available in India. The late Swami Akhandanand asked for my permission to publish an Indian edition. The enterprise proved very popular.

The book was translated into several Indian languages. An English translation also appeared. This reached the West, and was translated in several European languages. The result was that the book became the most popular of all my writings.

I have never been able to understand the reason for this popularity. I had written those articles casually, and I did not attached much importance to them. But perhaps the reason for the popularity is to be sought in the fact that I have looked upon the problem of health from a novel point of view, somewhat different from the orthodox methods adopted by doctors and *vaids*.

Whether my presumption is correct or not, many friends have been pressing me to publish a new edition, putting forth my views to date. I have never been able to revise the original. I have never had the time for it. The present enforced rest offers me such an opportunity and I am taking advantage of it. I have not even got the original with me. The exerpience of so many years cannot but have left its mark upon my thought. But those who have read the original book will notice that there is no fundamental difference between my ideas of today and those of 1906. But my mind is responsive. Therefore, whatever change the reader may find will, I hope, be in the nature of a progress.

I am giving a new name: *Key to Health.* Anyone who observes the rules of health mentioned in this book will find that he has got in it a real key to unlock the gates leading him to health. He will not need to knock at the doors of doctors or *vaids* from day to day.

Mohandas Karamchand Gandhi

Aga Khan Palace, Yeravda
August 28, 1942

Translator's Note

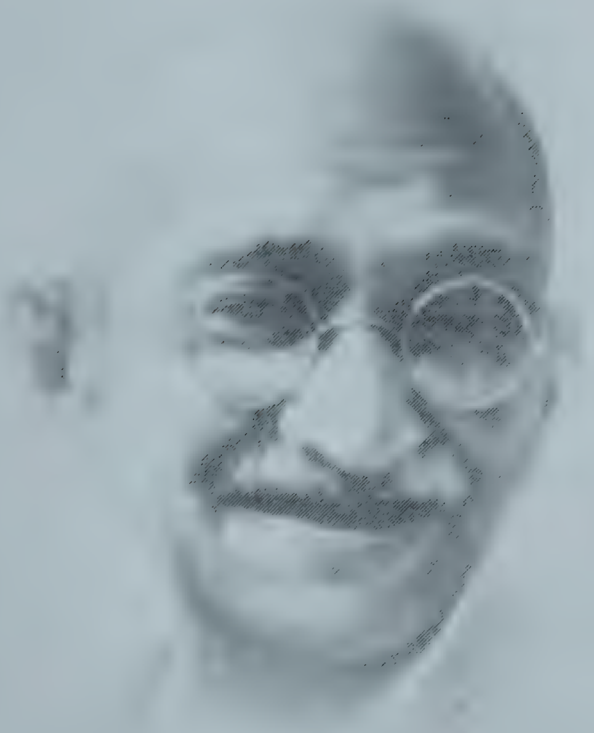
(In 1921 A. Rama Iyer of National College, Trichinopolya, translated Gandhi's A Guide to Health *into English. The following extracts are reproduced from the Translator's Introduction of the book.)*

Those who think of him (Gandhi) as a dreamy idealist or an unpractical visionary, with his head always in the clouds, will certainly be undeceived when they read this book replete from cover to cover with practical observations on the most practical question of Health. His views are of course radically different from the ordinary views that find expression in the pages of such books; in many cases, indeed, his doctrines must be pronounced revolutionary.

Even the most revolutionary of his doctrines, however, are based, not on the shifting quicksand of mere theory, but on the solid foundation of deep study, backed up by personal, experience of nearly thirty years. He himself recognises that many of his views will hardly be accepted by the ordinary reader, but he has felt himself impelled by a stern sense of duty to give publicity to his convictions formed after so much of study and experience. Some at least, however, of those who read his book cannot help being profoundly influenced by it. Such, at any rate has been the case with me.

A. Rama Iyer

National College, Trichinopolya
July 1921



Human Body

Everyone should regard it as his bounden duty to know something of the fundamental facts concerning his body... Indeed, if we consider the depth of our ignorance in such matters, we shall have to hang our heads in shame.

1

Human Body

It is necessary to understand the meaning of the word health, before entering upon a description of the human body. He is a healthy man whose body is free from all diseases; he carries on his normal activities without fatigue. Such a man should be able with ease to walk ten to twelve miles a day, and perform ordinary physical labour without getting tired. He should be able to digest ordinary, simple food. His mind and his senses should be in a state of harmony and poise. This definition does not include prize fighters and such like. A man with extraordinary physical strength is not necessarily healthy. He has merely developed his musculature, possibly at the expense of something else.

It is necessary to have enough knowledge of the human body which is expected to attain the above standard of health.

God alone knows what kind of education was prevalent in ancient times. But all of us have some experience of modern education in this country. It has no relation with our everyday life. Thus, it leaves us almost utterly ignorant about our own body. Our knowledge of our own towns, villages and our fields shares a similar fate. We are taught on the other hand, much about things that have no bearing on our daily life. I do not mean to say that such knowledge is of no use. But everything has its own place. We must first know enough of our own body, our own house, our village and its surroundings, the crop that grows there and its history before going on to anything else. General knowledge broad-based on this primary knowledge, alone can enrich our life.

The human body is composed of what the ancient philosophers have described as the five elements. These are:

earth,
water,
vacancy[1],
light and
air.

All human activity is carried on by means of the mind aided by the ten senses. These are the five senses of action, i.e. hands, feet, mouth, anus and the genitals, and the five senses of perception, i.e. the nose, of taste through the tongue, of seeing through the eyes and of hearing through the ears. Thinking is the function of the mind and some people have called the eleventh sense. In a healthy state all the ten senses and the mind act in perfect co-ordination.

The inner working of the human machine is wonderful. The human body is the universe in miniature. That which cannot be found in the body is not found in the universe. Hence the philosopher's formula, that the universe within reflects the universe without. It follows therefore that if our knowledge of our body could be perfect we would know the universe. But even the very best of doctors and *hakims* and *vaids* have not been able to acquire it. It will not be presumptuous for a layman to aspire to it. No one has yet discovered an instrument which can give us any information about the human mind. Scientists have given attractive description of the activities going on within and without the body, but no one can say what sets the wheel going. Who can explain the why and wherefore of death or foretell its time? In short, after infinite reading and writing, after infinite experience, man has come to know how little he knows.

---

[1] See also Chapter 16: Akash (Ether) on page 82.

A happy working of the human machine depends upon the harmonious activity of the various component parts. If all these work in an orderly manner, the machine runs smoothly. If even one of the essential parts is out of order, it comes to a stop. For instance, if the digestion is out of order, the whole body becomes slack. Therefore, he who takes indigestion and constipation lightly does not know the a,b,c of the rules of health. These two are the root causes of the innumerable ailments.

~

The question that demands our attention next is: what is the use of human body?

Everything in the world can be used and abused. This applies to the body also. We abuse it when we use it for selfish purposes, for self-indulgence or in order to harm another. It is put to its right use if we exercise self-restraint and dedicate ourself to the service of the whole world. The human soul is the part of the universal spirit of God. When all our activities are directed towards the realization of this link, the body becomes a temple worthy for the spirit to live in.

The body has been described as a mine of dirt. Looked at in its proper perspective, there is no exaggeration in this statement. If the body was nothing else but this, there could be no point in taking such pains to look after it. But if this so-called 'mine of dirt' can be put to its proper use, it becomes our first duty to cleanse it and keep it in a fit condition. The mines of precious stones and gold also have the look of ordinary earth on the surface. The knowledge that there are gold and precious stones underneath, induces men to spend millions and engage the best of scientific brains in order to get at what lies in those mines. Similarly, we cannot take too much pain over keeping in a fit condition the temple of the spirit — the human body.

Man came into the world in order to pay off the debt owed by him to it, that is to say, in order to serve God and His creation. Keeping this point of view in front of him, man acts as a guardian of his body. It becomes his duty to take such care of his body as to enable it to practice the idea of serving to the best of its ability.

2

Air

No one can live without air; one can live without water for a few days and without food for several days. Nature has, therefore, surrounded us on all sides with air so that we can get it without any effort.

We take in air through our nose and into our lungs. The lungs act as a sort of bellows. The atmospheric air which we breathe in has a life-giving substance — a gas known as oxygen. The air that we breathe out contains poisonous gases. These can be deadly, if not immediately allowed to spread out and get diluted by the atmospheric air. Hence the necessity of proper ventilation.

Inside our lungs, the air comes into close contact with blood and purifies it. Many people do not know the correct way of breathing. This prevents an adequate purification of their blood. Some people breathe through their mouth instead of the nose. This is a wrong way to breathe, and unless checked, it develops into a lifelong habit, a habit that is harmful. Nature has so designed our nose that it acts as a sort of filter for the air passing through it and also warms it up. In the case of individuals who breathe through their mouth, the air travels to the lungs without either the preliminary filtration or the warming (temperature moderation) that the nose offers. It follows therefore that those who do not know how to breathe should learn and practice breathing exercises. They are as easy to learn as they are useful. I do not wish to go into a discussion of the various *asanas* or postures. I do not mean to say that these are not important or useful. But I do wish to emphasize that a well-regulated life outweighs the advantage of studying and practicing elaborate postures or exercises. Any comfortable posture that ensures breathing through the nose and free chest expansion is enough for our purposes.

If we keep the mouth tightly closed, the breathing would have to be carried out by the nose. Just as we wash our mouth every morning, the nose should also be cleaned. Clean water, cold or lukewarm, is the best agent for this purpose. It should be taken in a cup in the palm of the hand and drawn up through the nostrils. It is possible to draw the water up through one nostril, while the other remains closed, and expel it through the other by opening it and closing the former. The process should be carried out gently so as to avoid discomfort. In order to cleanse the back portion of the nose known as nasopharynx, water should be brought out by the mouth or even swallowed.

We must see that the air that we breathe in is fresh. It is good to cultivate a habit of sleeping in the open under the stars. The fear of catching a chill should be dismissed from the mind. Cold can be kept out by plenty of covering. This covering should not, however, extend beyond the neck. If cold is felt on the head, it can be covered with a separate piece of cloth. The opening of the respiratory passage — the nose — should never be covered.

The day clothes should be changed and loose night clothes be put on before retiring. As a matter of fact no clothes are necessary at night when one sleeps covered with a sheet. Tight-fitting clothes should be avoided even during day.

The atmospheric air around us is not always pure; neither is it the same in every country. The choice of the country does not always lie in our hands but the choice of a suitable house in a suitable locality does rest with us to some extent. The general rule should be to live in a locality which is not too congested and insist upon the house being well-lighted and well-ventilated.

3

Water

As has been already pointed out, air is the most indispensable to our subsistence, while water comes next in order. Man cannot live for more than a few minutes without air, but he can live for a few days without water. And in the absence of other food, he can subsist on water alone for many days. There is more than 70% of water in the composition of our food-stuffs, as in that of the human body.

In order to keep healthy, everyone should take 5lbs (2.25l) of water or other liquid food in a 24 hour period. Drinking water must be pure.

Even though water is so indispensable, we take hardly any pains to keep it pure. Epidemics are as much the outcome of our indifference to the quality of the water we drink, as of the air we breathe. The drinking of dirty water very often produces also the disease of the stone.

Water may be impure in either of two ways — by issuing from dirty places, or by being defiled by us. Where the water issues from dirty places, we should not drink it at all; nor do we generally drink it. But we do not shrink from drinking the water which has been defiled by ourselves. River-water, for instance, is regarded as quite good for drinking, although we throw into it all sorts of rubbish and also use it for washing purposes. We should make it a rule never to drink the water in which people bathe. The upper portion of a river should be set apart for drinking water, the lower being reserved for bathing and washing purposes. Where there is no such arrangement, it is a good practice to dig in the sand, and take drinking water therefrom. This water is very pure, since it has been filtered by passage through the sand.

It is generally risky to drink well-water, for unless it is well protected; the dirty water at the top would trickle down into the well, and render the water impure. Further, birds and insects often fall into the water and die; sometimes birds build their nests inside the wells; and the dirt from the feet of those who draw water from the well is also washed down into the water. For all these reasons, we should be particularly careful in drinking well-water.

Water kept in tubs is also very often impure. If it has to be kept pure, the tubs should be washed clean at frequent intervals, and should be kept covered; we should also see that the tank or well from which the water is taken is kept in good condition.

Very few people, however, take such precautions to keep the water pure. Hence the best way of removing the impurities of the water is to boil it well, and, after cooling it, filter it carefully into another vessel through a thick and clean piece of cloth.

~

Our duty, however, does not end with this; we also owe a duty to our fellowmen. We should see to it that we do absolutely nothing to defile the water which is used for drinking by the public. We should scrupulously refrain from bathing or washing in the water which is reserved for drinking; we should never answer the calls of nature near the banks of a river, nor cremate the dead bodies there and throw the ashes after cremation into the water.

In spite of all the care that we may take, we find it so difficult to keep water perfectly pure. It may have, for instance, salt dissolved in it, or bits of grass and other decaying matter. Rain water is, of course, the purest, but, before it reaches us, it generally becomes impure by the absorption of the floating matter in the atmosphere. Perfectly pure water has a most beneficial effect on the system; hence doctors administer distilled water to their patients. Those suffering from constipation are appreciably benefitted by the use of distilled water.

Many people do not know that water is of two kinds, soft and hard. Hard water is water in which some kind of salt has been dissolved. Hence, soap does not readily lather in it, and food cannot be easily boiled in it. Its taste is brackish, while soft water tastes sweet. It is much safer to drink soft water, although some people hold that hard water is better by virtue of the presence of nutritious matter dissolved therein. Rain water is the best kind of soft water, and is therefore, the best for drinking purposes. Hard water, if boiled and kept over the fire for some half an hour, is rendered soft. Then it may be filtered and drunk.

~

The question is often asked, 'When should one drink water, and how much?' The only safe answer to this is this: one should drink water only when one feels thirsty, and even then only just enough to quench the thirst. There is no harm in drinking water during the meals or immediately afterwards. Of course, we should not wash the food down with water. If the food refuses to go down of itself, it means that either it has not been well prepared or the stomach is not in need of it.

Ordinarily, there is no need to drink water; and indeed, there should be none. As already mentioned, there is a large percentage of water in our ordinary articles of food, and we also add water in cooking them. Why then should we feel thirsty? Those people whose diet is free from such articles as chillies and onions which create an artificial thirst, have rarely any need to drink water. Those who feel unaccountably thirsty must be suffering from some disease or other.

~

In spite of what I have said, I know there are millions of people who have to drink what I have described as impure water. But that does not mean that their example is worth copying. Nature has provided us with sufficient reserves of vitality, and but for those reserves, man would have long ago disappeared from the face of the earth. Should this have happened, or should it happen, it would be because of man's own mistakes and transgressions of the rules of health.

Many orthodox Hindus in India do not drink water whilst traveling on account of religious prejudices. Surely, the enlightened can do for the sake of health what the unenlightened do in the name of religion!

4

Food

Whilst it is true that man cannot live without air and water, what nourishes the body is food. Hence the saying, food is life.

Food can be divided into three categories:

1. vegetarian,
2. flesh and
3. mixed.

Vegetarian Food

Vegetarian diet besides grains, pulses, edible roots, tubers and leaves, includes fruits, both fresh and dry. Dry fruits include nuts like almonds, pistachios, walnuts etc.

Milk and Milk Products

I have always been in favour of pure vegetarian diet. But experience has taught me that in order to be perfectly fit, vegetarian diet must include milk and milk-products such as curd, butter, *ghee,* etc.

This is a significant departure from my original thinking. I excluded milk from my diet for six years. At that time, I felt none the worse for the denial. But in the year 1917, as a result of my ignorance, I was laid down with severe dysentery. I was reduced to a skeleton, but I stubbornly refused to accept any medicine, and with equal stubbornness, refused to take milk or buttermilk. As a result I could not build up my body or pick up sufficient strength to leave the bed. I had taken a vow of not taking milk.

A friend who was familiar with medical science suggested that at the time of taking a vow, I would have had only cow and buffalo milk in mind; why should the vow prevent me from taking goat's milk? My wife supported him and I yielded. Really speaking, for one who has given up milk, though at the time of taking the vow only the cow and the buffalo were in mind, milk should be taboo. All animal milks have practically the same composition, though the proportion of the components varies in each case. So I may be said to have kept merely the letter, not the spirit, of the vow. But that as it may, goat's milk immediately seemed to bring new life in me. I picked up strength rapidly and was soon able to leave the bed.

On account of this and several similar experiences, I have been forced to admit the necessity of adding milk to the strict vegetarian diet. But I am convinced that in the vast vegetable kingdom there must be some thing, which, while supplying the same necessary substances which we derive from milk and meat, is free from their drawbacks, ethical and other.

Drawbacks of Taking Milk/Meat: In my opinion there are definite drawbacks in taking milk or meat. In order to get meat we have to kill. And we are certainly not entitled to any other milk except the mother's milk in our infancy.

Over and above the moral drawback, there are others, purely from the point of view of health. Both milk and meat bring with them the defects of the animal from which they are derived. Domesticated cattle are hardly ever perfectly healthy. Just like man, cattle suffer from innumerable diseases. Several of these are over-looked even when the cattle are subjected to periodical medical examination. I am conducting a dairy at the Sevagram Ashram. Yet I cannot say with certainty that all the cattle in the Sevagram Dairy are healthy. On a contrary, a cow that had been considered to be healthy by everybody was found to be suffering from tuberculosis. Before this diagnosis was made, the milk of that cow had been used regularly in the Ashram. If the Ashram cannot boast of fool-proof medical examination of its cattle, and be certain of the safety of its dairy products, the situation elsewhere is not likely to be much better. What applies to the milch cattle applies to a much greater extent to the animals slaughtered for meat.

As a general rule, man does not seem to worry much about his health. He considers himself to be quite safe in his medical fortress in the shape of doctors, *vaids* and *hakims.* His main worry and concern is how to get wealth and position in the society. This worry overshadows all the rest. Therefore, so long as some selfless scientist does not, as a result of patient research work, discover a vegetable substitute for milk and meat, man will go on taking meat and milk.

Man requires food which supplies tissue building substances to provide for the growth and daily wear and tear of the body. It should also contain something which can supply energy, fat, certain essential salts and roughage to help the excretion of waste matter. Tissue building substances are known as proteins. They are obtained from milk, meat, eggs, pulses and nuts. The protein contained in milk and meat, in other words, the animal protein, being more digestible and relatively easy to assimilate, are much valuable than vegetable proteins. Milk is superior to meat. The medicos tell us that in cases where meat cannot be digested, milk is digested quite easily. For vegetarians milk being the only source of animal proteins, is a very important article of diet. The proteins in raw eggs are considered to be the most easily digestible of all proteins.

Skimmed Milk: Contrary to the popular belief, skimmed milk is a very valuable article of diet. There are times when it proves even more useful than whole milk. The chief function of milk is to supply animal proteins for tissue building and tissue repair. Skimming, while it partially removes the fats, does not affect the proteins at all.

Cereals

The body requires other things besides milk, whole or skimmed. I give the second place to cereals — wheat, rice, *jowar, bajra* etc. These are used as the staple diet. Different cereals are used as staple in different provinces in India. In many places, more than one kind of cereals are eaten at the same time, for instance, small quantities of wheat, *bajra* and rice are often served together. This mixture is not necessary for the nourishment of the body. It makes it difficult to regulate the quantity of food intake, and puts an extra strain upon digestion. As all these varieties mainly supply starch, it is better to take only one, at a time.

Wheat[1] may well be described the king among the cereals. If we glance at the world map, we find that wheat occupies the first place. From the point of view of health, if we can get wheat, rice and other cereals become unnecessary. If wheat is not available and *jowar,* etc. cannot be taken on account of dislike or difficulty in digesting them, rice has to be resorted to.

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[1] See also Chapter 34: Wheat on page 133.

The cereals should be properly cleansed, ground on a grinding stone, and the resulting flour used as it is. Sieving of the flour should be avoided. It is likely to remove the *bhusi* or the pericarp which is a rich source of salt and vitamins, both of which are most valuable from the point of view of nutrition. The pericarp also supplies roughage, which helps the action of the bowels.

Rice[2] grain being very delicate, nature has provided it with an outer covering or epicure. This is not edible. In order to remove this inedible portion, rice has to be pounded. Pounding should be just sufficient to remove the epicarp or the outer skin of the rice grain. But machine pounding not only removes the outer skin, but also polishes the rice by removing its pericarp. The explanation of the popularity of polished rice lies in the fact that polishing helps preservation. The pericarp is very sweet and unless it is removed, rice is easily attracted by certain organisms.

Polished rice and wheat without its pericarp, supply us with almost pure starch. Important constituents of the cereals are lost with the removal of their pericarp. The pericarp of the rice is sold as rice polishing. This and the pericarp of wheat can be cooked and eaten by themselves. They can be also made into *chapattis* or cakes. It is possible that rice *chapattis* may be more easily digestible than whole rice and in this form a lesser quantity may result in full satisfaction.

We are in the habit of dipping each morsel of *chapatti* in vegetable or *dhall* gravy before eating. The result is that most people swallow their food without proper mastication. Mastication is an important step in the process of digestion, especially that of starch. Digestion of starch begins on its coming into contact with saliva in the mouth. Mastication ensures a thorough mixing of food with saliva. Therefore, starchy food should be eaten in a relatively dry form, which results in a greater flow of saliva and also necessitates their thorough mastication.

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[2] See also: Chapter 33: Polished vs. Unpolished Rice on page 131.

Pulses

After the starch supplying cereals come the protein supplying pulses — beans, lentils etc. Almost everybody seems to think that pulses are essential constituent of diet. Even meat eaters should have pulses. It is easy to understand that those who have to do hard manual work and who cannot afford to drink milk, cannot do without pulses. But I can say without any hesitation whatsoever that those who follow sedentary occupations as for instance, clerks, business men, doctors and those who are not too poor to buy milk, do not require pulses.

Pulses are generally considered to be difficult to digest and are eaten in a much smaller quantity than cereals. Out of variety of pulses, peas, gram and haricot beans *(sem)* are considered to be the most easy to digest and *mung* (green grams) and *masoor* (lentils) the least difficult to digest.

Vegetables and Fruits

Vegetables and fruits should come third on our list. One would expect them to be cheap and easily available in India. But it is not so. They are generally considered to be delicacies meant for the city people. In the villages fresh vegetables are a rarity, and in most places fruits are also not available. This shortage of greens and fruits is a slur on the administration of India. The villagers can grow plenty of green vegetables if they wish to. The question of fruits cannot be solved so easily. The land legislature is bad from the villager's standpoint. But I am transgressing.

Among fresh vegetables, a fair amount of leafy vegetables must be taken every day. I do not include potatoes, sweet potatoes, suran *(zimikand)* etc, which supply starch mainly, among vegetables. They should be put down in same category as starch supplying cereals. A fair helping of ordinary fresh vegetables is advisable. Certain varieties such as cucumber, tomatoes, mustard and cress and other tender leaves need not be cooked. They should be washed properly and eaten raw in small quantities.

As for fruits, our daily diet should include available fruits of the season, e.g. mangoes, grapes etc. should all be used in their season. The best time for taking fruits is in early morning. A breakfast of fruits and milk should give full satisfaction. Those who take an early lunch may have a breakfast of fruits only. Banana is a good fruit. But as it is very rich in starch, it takes the place of bread. Milk and banana make a perfect meal.

Ghee and Oil

A certain amount of fat is also necessary. This can be had in the form of *ghee* or oil. If *ghee* can be had, oil becomes unnecessary. It is difficult to digest and is not so nourishing as pure *ghee*. An ounce and half (42.52 g) of *ghee* per head per day should be considered ample to supply the needs of the body.

Whole milk is also a source of *ghee*. Those who cannot afford it should take enough oil to supply the need for fat. Among oils, sweet oil, coconut oil, and ground nut oil should be given preference. Oil must be fresh. If available, it is better to use hand-pressed oil.

Oil and *ghee* sold in the bazaar are generally quiet useless. It is a matter of great sorrow and shame. But so long as honesty has not become an integral part of business morals, whether through legislation or through education, the individual will have to procure the pure article with patience and diligence. One should never be satisfied to take what one can get, irrespective of its quality. It is far better to do without *ghee* and oil altogether than to eat rancid oil and adulterated *ghee*.

Sugar

As in the case of fats, a certain amount of sugar is also necessary. Although sweet fruits supply plenty of sugar, there is no harm in taking one to one and half ounces (28 g to 42.5 g) of sugar, brown or white in a day.

If one cannot get sweet fruits sugar may become a necessity. But the undue prominence given to sweet things nowadays is wrong. City folk eat too much of sweet things. Milk puddings, milk sweets and sweets of other kinds are consumed in large quantities. They are all unnecessary and are harmful except when taken in very small quantity. It may be said without any fear of exaggeration that partake of sweetmeats and other delicacies, in a country where the millions do not get an ordinary full meal, is equivalent to robbery.

What applies to sweets, applies with equal force to *ghee* and oil. There is no need to eat food fried in *ghee* or oil. To use *ghee* in making *puris* and *laddus* is thoughtless extravagancy. Those who are not used to such food cannot eat these things at all. Those who do eat them, I have often seen, fall ill. Taste is acquired, not born with us. All the delicacies of the world cannot equal the relish that hunger gives to food. A hungry man will eat a dry piece of bread with greatest relish, whereas one who is not hungry will refuse the best of sweetmeats.

Flesh Food

Flesh food includes fowl and fish. Milk is an animal product and cannot by any means be included in a strictly vegetarian diet. It serves the purpose of meat to a very large extent. In medical terms it can be classified as an animal food. However, a layman does not consider milk to be an animal food. On the other hand eggs are regarded by the layman as a flesh food. In reality, they are not. Nowadays sterile eggs are also produced.

The hen is not allowed to see the cock and yet it lays eggs. A sterile egg never evolves into a chick. Therefore, he who can take milk should have no objection to take sterile eggs.

Mixed Diet

Medical opinion is mostly in favour of a mixed diet, although there is a growing school of thought which is strongly of the opinion that anatomical and physiological evidence is in favour of man being a vegetarian. His teeth, his stomach, intestines etc., seem to prove that nature has meant man to be a vegetarian.

How Often and How Much to Eat

Now let us consider how often and how much should one eat. Food should be taken as a matter of duty — even as a medicine to sustain the body, never for the satisfaction of the palate. Thus, pleasurable feeling comes from satisfaction of real hunger. Therefore, we can say that relish is dependent upon hunger and not outside it. Because of our wrong habits and artificial way of living, very few people know what their system requires.

Our parents who bring us into this world do not, as a rule, cultivate self-control. Their habits and their way of living influence the children to a certain extent. The mother's food during pregnancy is bound to affect the child. After that during childhood, the mother pampers the child with all sorts of tasty foods. She gives the child a little bit out of whatever she herself may be eating and the child's digestive system gets a wrong training from its infancy. Habits once formed are difficult to shed. There are very few who succeed in getting rid of them. But when the realization comes to man that he is his own bodyguard, and his body has been dedicated to service, he desires to learn law of keeping his body in a fit condition and tries hard to follow them.

We have now reached a point when we can lay down the amount of various foods required by a man of sedentary habits, which most men and women who read this page, are.

Daily Food Requirements

Food	Required Quantity
Cow's milk	2 lbs. or 900 g
Cereals (wheat, rice, bajra in all)	6 oz. or 170 g
Vegetable, leafy	3 oz. or 85 g
Vegetable, others	5 oz. or 141 g
Vegetables, raw	1 oz. or 28 g
Ghee	1½ oz. or 42.5 g
Butter	2 oz. or 56.7 g
White Sugar	1½ oz. or 42.5 g
Fresh fruits	according to one's taste & purse

In any case it is good to take two sour limes a day. The juice should be squeezed and taken with vegetables or in water, cold or hot. All these weights are of raw stuff. I have not put down the amount of salt. It should be added afterwards according to taste.

Now, how often should one eat? Many people take two meals a day. The general rule is to take three meals: breakfast early in the morning and before going out to work, dinner at midday and supper in the evening or late. There is no necessity to have more than three meals. In cities some people keep on nibbling from time to time. This habit is harmful. The digestive apparatus requires rest.

5

Salt and Other Condiments

Common salt may be rightly counted as the king among condiments. Many people cannot eat their food without it. The body requires certain salts and common salt is one of them. These salts occur naturally in the various foodstuffs but when food is cooked in an unscientific way, e.g., throwing away water in which rice, potatoes, other vegetables have been boiled, the supply becomes inadequate. The deficiency then has to be made up by a separate addition of salt. As common salt is one of the most essential salts for the body, it might be supplemented in small quantities.

There is a school in England who even holds the view that salt is more harmful than most other condiments. As there is enough of salt in the composition of the vegetables we use, we need not put any extra salt into them. Nature herself has provided just as much salt as is required for the upkeep of our health. All the extra salt that we use is quite superfluous; all of it goes out of the body again in the form of perspiration, or in other ways, and no portion of it seems to have any useful function to perform in the body. One writer even holds that salt poisons the blood; this much we know from experience, that, in several diseases like piles and asthma, the disuse of salt at once produces appreciably beneficial results. And, I have not come across a single instance of a man being any worse for not using salt. I myself left off the use of salt two years ago, and I have not only not suffered by it, but have even been benefitted in some respects. I have not now to drink as much water as before, and am more brisk and energetic.

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As a general rule several condiments are not required by the body, e.g., chilies fresh or dry, pepper, turmeric, coriander, caraway, mustard, *methi,* asafoetida, etc. These are taken just for the satisfaction of the palate. My opinion, based on my personal experience of fifty years, is that not one of them is needed to keep perfectly healthy. Those whose digestion has become very feeble might take these things as medicine for a certain length of time, if considered necessary. But one should make it a point to avoid their use for the satisfaction of the palate.

All condiments, even salt, destroy the natural flavour of vegetables and cereals etc. Those whose palate has not become vitiated enjoy the natural flavour of the foodstuff much more than after the addition of salt or other condiments. That is why I have said that salt should be taken when necessary as an adjunct. As for chilies, they burn the mouth and irritate the stomach. I have seen several cases of sore mouth caused by the taking of chillies. The natives of South Africa will not touch condiments. They cannot bear the colour of turmeric in their food. In the same way, Englishmen also do not readily take to our condiments.

6

Tea, Coffee and Cocoa

None of these is required by the body. The use of tea is said to have originated in China. Some clever Chinaman discovered a grass called tea which when added to boiled water in a very small quantity gave it a golden colour. The colour did not appear unless the water was boiled. Thus the grass became an infallible test for seeing when a given quantity of water was boiled. The way, the test is used, is to put the tea leaves in a strainer. If the water was boiled it will assume a golden colour. Another quality of tea leaves is said to be that they impart a delicate flavour to the water.

Tea prepared as above is harmless. But the tea that is generally prepared and taken has not only nothing to recommend it, it is actually harmful. The leaves contain tannin which is harmful to the body. Tannin is generally used in the tanneries to harden leather. When taken internally it produces a similar effect upon the mucous lining of the stomach and intestine. This impairs digestion and cause dyspepsia. It is said that in England innumerable women suffer from various ailments on account of their habit of drinking tea which contains tannin. Habitual tea drinkers begin to feel restless if they do not get their cup at the usual time. In my opinion, the usefulness of tea, if any, consists in the fact that it supplies a warm sweet drink which contains some milk. The same purpose may well be served by taking boiled hot water mixed with a little milk and sugar.

What I have said about tea applies more or less to coffee also. There is a popular saying about coffee in Hindustani which says, 'Coffee allays cough and relieves flatulence, but it impairs physical and sexual vigour and makes the blood watery, so that there are three disadvantages against its two advantages.' I do not know how far the saying is justified.

I hold similar opinion with regard to cocoa. Those, whose digestion works normally, do not require the help of tea, coffee or cocoa. A healthy man can get all the satisfaction that he needs out of ordinary food. I have freely partaken of all the three. I used to suffer from one ailment or another while I was using them. By giving them up I have lost nothing, and have benefited a good deal. I can get the same satisfaction from a clear vegetable soup that I used to derive from tea etc. Hot water, honey and lemon make a healthy nourishing drink, which can well substitute tea or coffee.

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A harmless and healthy substitute for coffee (tea or cocoa) can be prepared as follows. Good and well-sifted wheat is put into a frying-pan over the fire and well fried, until it has turned completely red, and begun to grow dark in colour. Then it is powdered just like coffee. A spoon of the powder is then put into a cup, and boiling water poured on to it. Preferably keep the thing over the fire for a minute, and add milk and sugar, if necessary, and you get a delicious drink, which is much cheaper and healthier than coffee.

7

Intoxicants

The intoxicants used in India might be taken as the following: alcohol, *bhang, ganja,* tobacco and opium. Alcohol or liquor includes the country-made liquor and *arak,* besides the large quantity of liquor imported from foreign countries. All these should be strictly prohibited. Alcohol makes a man forget himself and while its effects last, he becomes utterly incapable of doing anything useful.

There is a school of thought which favours limited and regulated consumption of alcohol and believe it to be useful. I have not found any weight in their argument. Even if we accept their view for a moment, we have still to face the fact that innumerable human beings cannot be kept under discipline. Therefore it becomes our duty to prohibit alcoholic drinks even if it were only for the sake of this vast majority.

Parsis have strongly supported the use of *tadi.* They say that although *tadi* is an intoxicant it is also a food and even helps to digest other foodstuffs. I have carefully examined this argument and have read a fair account of literature pertaining to this subject and come to the conclusion that it can have no place in man's food.

The advantages, attributed to *tadi,* are all available from other foodstuffs. *Tadi* is made out of *khajuri* (a variety of palm tree) juice. Fresh *khajuri* juice is not an intoxicant. It is known as *nira*[1] in Hindustani and many people have been cured of their constipation as a result of drinking *nira.* I have taken it myself though it did not act as a laxative with me. I found that it had the same food value as sugarcane juice. If one drinks a glass of *nira* in the morning instead of drinking tea, etc., he should not need any breakfast.

Several varities of palm grow spontaneously in our country. All of them yield drinkable juice. As *nira* gets fermented very quickly, it has to be used up immediately and therefore on the spot. Since this condition is difficult to fulfill except to a limited extent, in practice, the best use of *nira* is to convert it into palm jaggery. Palm jaggery can well replace sugarcane jaggery. In fact some people prefer it to the latter. One advantage of palm jaggery over sugarcane jaggery is that it is less sweet and therefore one can eat more of it.

If the palms that are used for making *tadi* are used for making jaggery, India will never lack sugar and the poor will be able to get good jaggery for very little money. Palm jaggery can be converted into molasses and refined sugar. But the jaggery is much more useful than refined sugar. The salts present in the jaggery are lost in the process of refining. Just as refined wheat flour and polished rice lose some of their nutritive value because of the loss of the pericarp, refined sugar also loses some of the nutritive value of the jaggery. One may generalize that all foodstuffs are richer if taken in their natural state as far as possible.

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[1] See also Chapter 38: Nira — A Nutritious Beverage on page 143.

Let us return to liquor for the moment.

None of the public workers perhaps have the same bitter experience of the evils of the drinking as I have had. Most of the Indians going to South Africa as indentured labourers were addicted to drinking. The law there did not permit Indians to take liquor to their houses except under a medical certificate. They could go to the drinking booths and drink as much as they liked. Even the women had fallen victims to this evil habit. I have seen them in the most pathetic condition. One who has seen those scenes near the public bars will never support drinking.

African natives (negroes) were not given to drinking originally. Liquor may be said to have simply ruined them. Large numbers of labourers are seen to waste all their earnings in drinking so that their lives become devoid of any grace.

And what about Englishmen? I have seen respectable Englishmen falling in the gutter under the effect of alcohol. There is no exaggeration in this statement. During the war many Englishmen had to leave the Transvaal. Some of them were taken in my home. One of them was an engineer and a good man in every way, when not under the effects of alcohol. He was a theosophist. Unfortunately, he was addicted to drink and lost all control over himself when he was drunk.

On my return from South Africa to India I had a similar painful experience of the evils of drink. Several Princes have been and are being ruined by liquor. What applies to them applies more or less to many a rich youth. The condition of labour as a result of taking alcohol is also pitiable. As a result of such bitter experiences, I have become a staunch opponent of alcohol; this should not surprise the readers.

In a nutshell, alcohol ruins one physically, morally, intellectually and economically.

8

Tobacco

Tobacco has simply wrought havoc among mankind. Once caught in its tangle, it is rare to find anyone get out again.

The use of tobacco, in one form or the other, is prevalent all over the world. Tolstoy has called it the worst of all intoxicants. This verdict of that great man should command our respect. He had freely indulged in the use of tobacco and alcohol in his early days and had experienced the harmful effects of both. I must admit, however, that I cannot talk about the evils of tobacco with the same authority and knowledge as in the case of opium and alcohol. But I can certainly say that I am not aware of a single advantage accruing from the use of tobacco.

Tobacco smokers become callous and careless of others' feelings. Non-smokers generally cannot bear the smell of tobacco smoke, but one often comes across people in railway trains and tramways who just go on smoking, heedless of the feelings of their neighbours. Smoking causes salivation and most smokers have no hesitation in spitting anywhere.

The breath of tobacco smoker is foul and stale. There is no doubt that tobacco is an intoxicant and while under its effect one forgets one's worries and misfortunes. One of Tolstoy's characters had to do a ghastly deed. The man has to commit a murder. At first, the author makes him drink liquor. In spite of the effects of liquor, he hesitates. Lost in thought he lights a cigar and begins to smoke. As he watches the smoke curl up he exclaims, 'What a coward I am! When it is my duty to commit this murder, why should I hesitate to do so? Get up, go ahead, and do your job.' Thus his wavering mind finally decides to commit murder. I know this argument is not very convincing. All smokers are not bad men. All the same the thoughtful should ponder over the above quotation. What Tolstoy perhaps means is that smokers keep on committing minor crimes which generally pass unnoticed.

In India people use tobacco for smoking, snuffing and also for chewing. Some believe that snuff produces a beneficial effect, and they use it under the advice of *vaids* and *hakims*. I think that it is not necessary. A healthy man should never have such requirements. As for chewing tobacco, it is the dirtiest of the three ways in which tobacco is consumed.

There is a popular saying in Gujarati which says that all the three are equally guilty: the smoker fills his house with smoke, the chewer dirties every corner and the snuffer his clothes. Lovers of health, if they are slaves to any of these evil habits, will resolutely get out of the slavery. Several people are addicted to one, two or all the three of these habits.

These habits do not appear loathsome to them. But if we think over it calmly, there is nothing becoming about blowing off smoke or keeping the mouth stuffed with tobacco and pan practically the whole day long or opening a snuffbox and taking snuff every now and then. All the three are most dirty habits.

9

Vitamins

Absence or insufficiency of minute traces of certain substances other than protein, carbohydrate, fat and mineral salts present in natural foodstuff causes certain well-defined symptoms of diseases and ultimately produces death. These substances were called vitamine.

The name, Vitamine, was first given to an impure chemical compound isolated from rice polishing by Funk[1]. That compound contained nitrogen, and as it was essential for life, it was termed vitamine — *life-mine.*

Later investigations on these compounds have shown that most of them (so far isolated) do not contain any nitrogen. So the name vitamine is a misnomer. But as the term was a current coin for a long time, only the terminal 'e' was dropped at the suggestion of Drummond[2] and these compounds are now designated by the general term 'vitamin'.

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[1] Polish Americal biochemist Casimir Funk (1884-1967).

[2] Sir Jack Cecil Drummond (1891-1952).

Existence of vitamins was first recognized by the well-known principle of cause and effect. Even in 1928 McCarrison wrote: 'Though these substances are essential to life and are builders of our bodies, we cannot as yet make them nor see them nor weigh them, as we can make, see and weigh the other constituents of our food: the proteins, the fats, the starches, the sugars, the mineral salts and water.' But the painstaking series of researches of scientists during the past few years have altered the position considerably. Of the eight or nine vitamins known today four have been isolated in a pure state.

These are vitamins
A: the fat soluble factor of growth,
B: the antineuritic vitamin,
C: the antiscorbutic vitamin,
D: the anti-rachitic vitamin.

With these preliminary remarks I shall proceed to discuss the four vitamins in detail.

Vitamin A

It was recognized that night-blindness and xerophthalmia (a disease of the eye) occur when fresh green vegetables, pure good milk and certain other things are eliminated from the diet, and they are cured when cod-liver oil is administered for some time. This indicates the presence of certain substance in cod-liver oil as well as those natural foods which is a preventive as well as curative for night-blindness and xerophthalmia. It was also recognized that the absence of this factor inhibits the growth of the animal. It was designated as vitamin A. Although cod-liver oil is a very good source of vitamin A, it is present in such a minute quantity there that vitamin A could not be isolated from it. It may be mentioned here that cod-liver oil contains 99 per cent fat and of the 1 per cent non-fatty substances; vitamin

A is only a minute trace. This shows what minute quantities of this vitamin we require for a healthy life.

It was only after the discovery by Nobel Laureate Ulf Svante Von Euler and Paul Karrer that certain fish-liver oils were found to contain 200-2000 times the amount of vitamin A present in common cod-liver oil that the isolation of vitamin A was possible. One such fish is Halibut. But fish-liver oils are much richer in vitamin A in summer than in winter. For instance, halibut oil contains 20 times more in summer. This depends on the nature of food taken.

Vitamin A is a viscous light oil, containing only carbon, hydrogen and oxygen. It is a complex alcohol soluble in fat and is very little soluble in water. As it is a compound containing four conjugated double bonds it is readily oxidised.

Only the animal world contains vitamin A, but it is derived from the vegetable source which supplies carotene and similar other plant pigments. Therefore carotene is called Pro-Vitamin A. One molecule of carotene is converted into two molecules of vitamin A in the animal and human systems. Up till now carotenes and kryptoxanthin (pigment of the yellow maize) have been recognized as Pro-vitamin A. Carotene is present in all green leafy vegetables, peas and beans, carrots, oranges or yellow fruits and vegetables. Excellent sources of vitamin A are fish-liver oils, butter, cream, eggs and cow's milk. But the vitamin A content of milk depends on the nature of food taken by the cow. An abundant supply of green fodder is to be ensured in order to get milk rich in vitamin A. Of course it goes without saying that butter and cream contain more vitamin A than milk, but their vitamin content also depends on the nature of milk from which they are prepared. Generally town cow's milk contains less vitamin A as they get more of cereals than of green fodder.

But no one need go to these animals and costly sources for vitamin A. It is immaterial for men in general whether the vegetable world contains carotene or vitamin A, so long as the ultimate effect is the same.

Let me quote from *Annual Review of Biochemistry for 1935,* p.396: 'Green leafy vegetables (spinach, kale, collards, turnip greens, beet tops, mustard greens), peas, asparagus and snap (or string) beans are economical sources of iron and vitamins A and G. Carrots, apricots and other coloured (orange or yellow) fruits or vegetables furnish vitamin A.'

Ripe mangoes and papayas contain a good deal of carotene. Sweet pumpkins which grow abundantly in many parts of India also contain carotene.

It is not essential to take everyday the required amount of vitamin A as it is necessary to take carbohydrate for supplying required calories. When the intake of carotene is in excess of the requirement it is converted into the vitamin and stored up in the liver for future use, specially when there is deficient intake.

Vitamin B_1

The disease beri-beri is commonly attributed to deficiency of this vitamin. Deficiency of this vitamin also causes lack of appetite and defective movements in the alimentary canal.

It has been isolated from yeast and rice polishings. It is soluble in water. It contains carbon, hydrogen, nitrogen, sulphur and oxygen. It is one of the most stable vitamins, is fairly resistant to heat and oxidation. It is destroyed at 120° C but the decomposition at 100° C (the temperature of boiling water) is insignificant. Continued heating of foodstuffs at 100° C, however, leads to some loss of the vitamin. In preserving and canning foodstuffs the temperatures employed are frequently much higher than 100° C, and canned foods of all description may contain very little or no vitamin B_1 and, as a practical rule, should therefore be regarded as free from it, unless they have been specially investigated and found to contain it. Foodstuffs should not be boiled for more time than is necessary to keep this vitamin almost intact.

Most people derive their supply of vitamin B_1 from cereals and pulses. Different parts of cereals vary widely in their vitamin B_1 content; the largest amount is found in the embryo or germ, the bran (pericarp, and aleurone layer) comes next in order, whereas the endosperm is deficient in the anti-neuritic factor. Hence the inferiority of white wheaten flour or mill-polished rice as diet.

In Bengal people generally use *dhenki*-husked rice but they boil that rice with excess of water and after it is well boiled decant the liquid from the solid. Such rice is no protection against beri-beri. The people of Bengal should give up this bad practice.

In the preparation of *chapati* from wheat there is no danger of vitamin B_1 content of the wheat being diminished. Yeast is the richest source of vitamin B_1. Eggs are also valuable source of the anti-beri-beri factor. Large deposits of this vitamin in the seeds of plants and eggs of animals (birds and fishes) suggests a due provision made for the wants of the young offspring during the early period of life.

'Of the green vegetables tested, watercress and lettuce proved to be about twice as rich as cabbage and spinach and not inferior to egg yolk or the embryo of cereals, if dry weights are compared.' *(Vitamins: A survey of the Present Knowledge).* Of the common Bengali foodstuffs the riches source is *pooin-shak (Bassela cordifolia),* then we have *dherosh bhindi, gima shak* and cabbage. Potato contains a small quantity of vitamin B_1, but the large quantities of potato consumed make it a good source of the vitamin in an ordinary diet. Milk is poor in this vitamin.

Vitamin C

Deficiency of this vitamin leads to scurvy, a disease characterized by a spongy condition of the gums and a tendency to haemorrhages into the gums, muscles, joints and internal organs. It was for centuries the scourge of the sailor and the explorer who could not get fresh vegetables or fruits. They discovered empirically that an addition of lime juice to the diet would prevent it.

Vitamin C was first isolated in a crystalline condition in 1928 from the cortex of the adrenal gland. Later on it has been isolated from lemon juice and other substances. It is an acid and it has got anti-scorbutic properties, so it is now known by the name of ascorbic acid. It is a compound of carbon, hydrogen and oxygen. It has been synthesized. Ascorbic acid is exceedingly soluble in water, and of all the vitamins it is most easily destroyed by heat. Human milk contains more of it than cow's or goat's milk. It is the practice in India to take boiled milk which contains still less vitamin C. Therefore, children who do not get sufficient mother's milk but depend on cow's or goat's milk should be given orange, grape or tomato juice to make up for the ascorbic acid deficiency.

Very recently ascorbic acid content of many Indian foodstuffs has been analysed and it has been found that *kul* (plum) *batabi-lebu (circus decumana),* guava, mango, *lichi* and green chilli are the richest sources of vitamin C. All the above-mentioned fruits are now found to be richer than the Indian lemon and orange, the well-known antiscorbutics *(Indian Journal of Medical Research,* October 1935, p. 350).

We should depend on uncooked foodstuffs for this vitamin. Fruits are as a rule taken uncooked. The above-mentioned fruits are more or less abundant throughout India and in season they become cheap also.

Vitamin D

Deficiency of this vitamin is the chief cause of rickets, which is also produced by deficiency of calcium or of phosphate. In the presence of ample D much smaller amounts of calcium and of phosphate are sufficient to prevent rickets than when there is only a small amount of the vitamin present. It conserves these mineral constituents in the body. The vitamin is also growth promoting. But its overdosage is toxic to most species of animals.

It is soluble in fat and is moderately resistant to heat. It is produced from ergosterol by irradiation or exposure to sunlight. Ergosterol is present in all animal and vegetable fats as well as in human skin. In a sunny country like India no one need, therefore, suffer from deficiency of this vitamin. Rubbing the body with some amount of oil and the exposing it to sunlight for some time is the best way of getting this vitamin. In Bengal villages there is a custom of rubbing the body of infants with oil and then exposing them to sunlight. This is a very good custom. But no one need think that a long continued exposure to sunlight would ensure maximum intake of the vitamin. Ultra-violet rays of sunlight which convert ergosterol into vitamin D also destroy the vitamin. So a moderate exposure which the system also enjoys would be the ideal thing.

It is also an alcohol like ergosterol and it contains the same number of carbon, hydrogen and oxygen atoms and double bonds as ergosterol, and as it has an influence on calcium (metabolism) the name calciferol has been given to it.

Excellent sources of calcifrol are the liver oils of the halibut, tarbot and cod and the body oils of certain fishes. Egg yolk is a good source. Excellent sources of calciferol after irradiation are yeast and egg yolk. Good sources are oils and fats.

Conclusion

As a result of the painstaking researches of scientists the importance of vitamins in our diet has been brought to light and some of these substances, which were at one time considered to be mysteries, have also been prepared in a pure state. But as night follows day some evil also followed this very laudable work of the scientists. There came a large number of artificial preparations in the market which brought fortunes to some at the cost of many poor men. These artificial preparations should by all means be avoided. Nature has provided ample amount for us — even for the poorest amongst us.

We can get enough of these vitamins from green leafy vegetables, cereals and pulses, cheap season fruits and sunlight. We need not make any abnormal change in our diet for the vitamins.

10

Dress

Dress is also a matter of health to a certain extent. While it is true that the choice of our dress does not rest always in our hands, for we have perforce to adopt the manners of our elders. The chief object of dress has been forgotten, and it has come to be regarded as indicative of a man's religion, country, race and profession. In this state of things, it is very difficult to discuss the question of dress strictly from the point of view of health, but such a discussion must necessarily do us good. Under the term dress, we include all such things as boots and shoes, as well as jewellery and the like.

What is the chief object of dress? Man in his primitive state had no dress at all; he went about naked, and exposing almost the whole body. His skin was firm and strong, he was able to stand sun and shower, and never once suffered from cold and kindred ailments. We inhale the air not only through the nostrils, but also through the numberless pores of the skin. So when we cover the body with clothing, we are preventing this natural function of the skin. But when the people of the colder countries grew more and more indolent, they began to feel the need to cover their bodies. They were no longer able to stand the cold, and the use of dress came into being, until at length it came to be looked upon not merely as a necessity, but as an ornament. Subsequently it has also come to be regarded as an indication of country, race etc.

In fact, Nature herself has provided an excellent covering for us in our skin. The idea that the body looks unseemly in undress is absurd, for the very best pictures are those that display the naked body. When we cover up the most ordinary parts of our body, it is as though we felt ashamed of them in their natural condition, and as though we found fault with Nature's own arrangement. We 'adorn' our body in all sorts of hideous ways, and pride ourselves on our handsomeness!

If our eyes were not blinded by foolish habit, we should see that the body looks most handsome only in its nakedness, as it enjoys its best health only in that condition. Dress, indeed, detracts from the natural beauty of the body. But, not content with dress alone, man began to wear jewels also. This is mere madness, for it is hard to understand how these jewels can add an iota to the body's natural beauty. These ornaments only serve to help the accumulation of dirt in the body; there is indeed no limit to the dirt on the nose and ears. We mistake this filthiness for beauty, and throw money away to secure it; and we do not even shrink from putting our lives at the mercy of thieves.

A thorough reform in dress is by no means an easy matter, but it is surely possible for all of us to renounce our jewels and all superfluous clothing. We may keep some few things for the sake of convention, and throw off all the rest.

Now-a-days the notion has gained ground that European dress is necessary for maintaining our decency and prestige! This is not the place to discuss this question in detail. Here it will be enough to point out that, although the dress of Europeans might be good enough for the cold countries of Europe, it is hopelessly unsuited to India. Indian dress, alone, can be good for Indians, whether they be Hindu or Musalman. Our dress being loose and open, air is not shut out; and being white for the most part, it does not absorb the heat. Black dress feels hot, since all the sun's rays are absorbed into it, and, in its turn, into the body.

The practice of covering the head with the turban has become quite common with us. Nevertheless we should try to keep the head bare as far as possible. To grow the hair, and to dress it by combing and brushing, parting in the middle and so on, is nothing short of barbarous. Dust and dirt, as well as nits and lice, accumulate in the hair, and if a boil were to arise on the head, it cannot be properly treated. Especially for those who use a turban, it would be stupid to grow the hair.

The feet also are common agents of disease. The feet of those who wear boots and shoes grow dirty, and begin to exude a lot of stinking perspiration. So great is the stink that those who are sensitive to smells will hardly be able to stand by the side of one removing his shoes and socks.

Our common names for the shoe speak of it as the 'protector of the feet' and the 'enemy of the thorn' showing that shoes should be worn only when we have to walk along a thorny path, or over very cold or hot ground, and that only the soles should be covered, and not the entire feet. And this purpose is served excellently well by the sandal. Some people who are accustomed to the use of shoes often suffer from headaches, of pain in the feet, or weakness of the body. Let them try the experiment of walking with bare feet, and then they will at once find out the benefit of keeping the feet bare, and free from sweat by exposure to the air.

11

Exercise

Exercise is as much of a vital necessity for man as air, water and food, in the sense that no man who does not take exercise regularly can be perfectly healthy. By 'exercise' we do not mean merely walking, or games like hockey, football, and cricket; we include under the term all physical and mental activity. Exercise is as essential to the mind as to the body. The mind is much weakened by want of exercise as the body, and a feeble mind is, indeed, a form of disease. An athlete, for instance, who is an expert in wrestling, cannot be regarded as a really healthy man, unless his mind is equally efficient. As we know, 'a sound mind in a sound body' alone constitutes true health.

Which, then, are those exercises which keep the body and the mind equally efficient? Indeed, Nature has so arranged it that we can be engaged in physical as well as mental work at the same time. The vast majority of men on earth live by field-labour. The farmer has to do strenuous bodily exercise at any cost, for he has to work for 8 or 10 hours, or even more, in order to earn his bread and clothing. And efficient labour is impossible unless the mind is also in good condition. He has to attend to all the many details of cultivation; he must have a good knowledge of soils and seasons, and perhaps also of the movements of the sun, the moon, and the stars. He knows, for instance, that rain is about to fall when a particular class of birds gather together, and begin to make noise. He knows as much of the earth and the sky as is necessary for his work. As he has to bring up his children, he must know something of *Dharma Sastra.* Since he lives under the broad open sky, he easily realises the greatness of God.

Of course, all men cannot be farmers, nor is this written for them. We have however, described the life of the farmer, as we are convinced that it is the natural life for man. To the extent to which we deviate from these natural conditions our health must suffer. From the farmer's life we learn that we should work for at least 8 hours a day, and it should involve mental work as well.

Merchants and others leading a sedentary life have indeed to do some mental work, but their work is too one-sided and too inadequate to be called exercise.

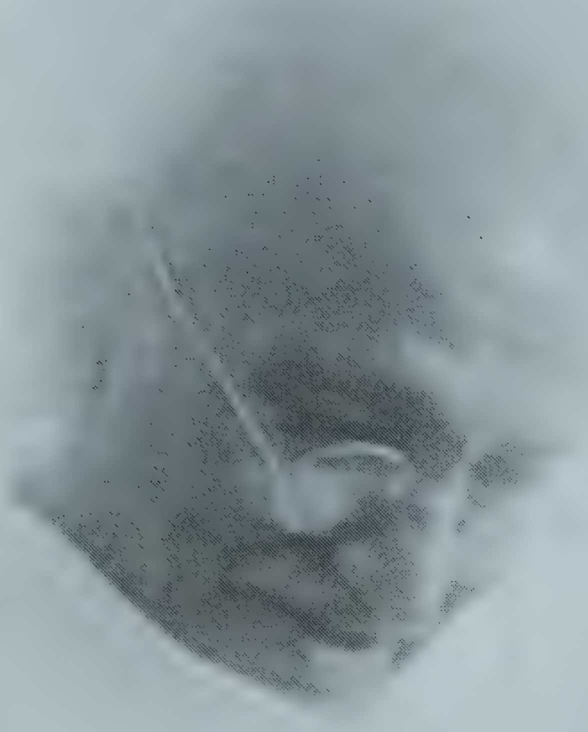
For such people the wise men of the West have devised games like cricket and football, and such minor games as are played at parties and festive gatherings. No doubt these games do give exercise to the body, but it is a question if they are equally beneficial to the mind. How many of the best players of football and cricket are men of superior mental powers? What have we seen of the mental equipment of those Indian Princes who have earned a distinction as players? On the other hand, how many of the ablest men care to play these games? We can affirm from our experience that there are very few players among those who are gifted with great mental powers. The people of England are extremely fond of games, but their own poet, Kipling, speaks very disparagingly of the mental capacity of the players.

In India, however, we have chosen quite a different path! Our men do arduous mental work, but give little or no exercise to the body. Their bodies are enfeebled by excessive mental strain, and they fall prey to serious diseases; and just when the world expects to benefit by their work, they bid it eternal farewell! Our work should be neither exclusively physical nor exclusively mental, nor such as ministers merely to the pleasure of the moment. The ideal kind of exercise is that which gives vigour to the body as well as to the mind; only such exercise can keep a man truly healthy, and such a man is the farmer.

But what shall he do who is no farmer? The exercise which games like the cricket give is too inadequate, and something else has to be devised. The best thing for ordinary men would be to keep a small garden near the house, and work in it for a few hours every day. Some may ask, 'What can we do if the house we live in be not our own?' This is a foolish question to ask, for, whoever may be the owner of the house, he cannot object to his ground being improved by digging and cultivation. And we shall have the satisfaction of feeling that we have helped to keep somebody else's ground neat and clean.

Those who do not find time for such exercise or who may not like it, may resort to walking, which is the next best exercise. Truly has this been described as the Queen of all exercises. The main reason why our sadhus and fakirs are strong as a class is that they go about from one end of the country to the other only on foot. Thoreau, the great American writer, has said many remarkable things on walking as an exercise. He says that the writings of those who keep indoors and never go out into the open air, will be as weak as their bodies. Referring to his own experience, he says that all his best works were written when he was walking the most. He was such an inveterate walker that four or five hours a day was quite an ordinary thing with him! Our passion for exercise should become so strong that we cannot bring ourselves to dispense with it on any account. We hardly realise how weak and futile is our mental work when unaccompanied by hard physical exercise. Walking gives movement to every portion of the body, and ensures vigorous circulation of the blood; for, when we walk fast, fresh air is inhaled into the lungs. Then there is the inestimable joy that natural objects give us, the joy that comes from a contemplation of the beauties of nature. It is, of course, useless to walk along lanes and streets, or to take the same path every day. We should go out into the fields and forests where we can have a taste of Nature. Walking a mile or two is no walking at all; at least ten or twelve miles are necessary for exercise.

Those who cannot walk so much every day can at least do so on Sundays. Once when a man who was suffering from indigestion went to the doctor to take medicine he was advised to walk a little every day, but the man pleaded that he was too weak to walk at all. Then the doctor took him into his carriage for a drive. On the way he deliberately dropped his whip, and the sick man, out of courtesy, got down to take it. The doctor, however, drove on without waiting for him, and the poor man had to trudge behind the carriage. When the doctor was satisfied that he had walked long enough, he took him into the carriage again, and explained that it was a device adopted to make him walk. As the man had begun to feel hungry by this time, he realised the value of the doctor's advice, and forgot the affair of the whip. He then went home and had a hearty meal. Let those who are suffering from indigestion and kindred diseases try for themselves, and they will at once realise the value of walking as an exercise.



Natural Therapeutics

Nature Cure does not 'sell a cure' to the patient... (it) teaches him the right way of living, which would not only cure him of a particular ailment but also save him from falling ill in the future. It is not a course of 'treatment'. It is not claimed that (it) can cure all disease. No system of medicine can do that or else we would all be immortals.

12

Precautions Against Ills of the Season

In the wake of rain has come malaria and we have two or three sick beds every now and then. But our precautions and aftercare have ensured plain sailing so far. The rigid rules we have laid down and are following may be of use everywhere during this season.

> *The first rule,* applicable to all, is the general rule to leave your meal when it tastes sweetest, i.e., to leave it partially hungry.
>
> *The second rule* is to avoid foods containing an excess of proteins (all *dhalls* for instance) and to skip a meal as soon as you feel ready.
>
> *The third rule,* as soon as you feel out of sorts, or have a feeling of feverishness is to have an opening dose of castor oil and fast.

Whilst a fever or cold is on, repeated doses of hot water and lime and salt (or *gur* or honey) is the usual treatment. All food, even milk, is to be scrupulously eschewed, and there should be no hurry to resume normal diet on the disappearance of cold or fever.

> *The fourth rule,* for those who can afford, is the use of a mosquito net and for the poorest to smear the exposed parts of the body, whilst sleeping, with kerosene oil.

In almost all cases here we have fought colds and fevers successfully by this treatment and have not had to have recourse to quinine (though quinine is by no means taboo).

13

Natural Therapeutics

(These chapters are written in order to introduce the reader to this most important branch of therapeutics and tell him how I have made use of these methods in my own life. The subject has been touched upon in the foregoing chapters. It will be dealt here. — MKG)

The science of natural therapeutics or treatment is based on the use of the same five elements which constitute the human body. To refresh the reader's memory, these are earth, water, ether, sunlight and air. It is my effort to point out how they can be utilized for health purposes.

Up till the year 1901, although I did not rush to doctors whenever I happened to get ill, I did use their remedies to a certain extent. I used to take fruit-salt for constipation. The late Dr. Pranjivan Mehta who had come to Natal introduced me to certain drugs to remove general lassitude. This led me to read literature on the uses of drugs. Add to this a little more knowledge I gained by some work I had put in at a cottage hospital in Natal. This enabled me to carry on for some time, but none of the drugs did me any good in the end. Headaches and loss of a sense of general well-being persisted. I was very dissatisfied with this state of things and what little faith I had in medicines began to fade.

All through this interval my experiments in dietetics continued. I had great faith in nature cure methods, but there was nobody to help me with practical guidance in their use. With the help of whatever knowledge I could gather by reading little of nature cure literature, I tried to treat myself by diet regulation. My habit of going out for long walks also stood me in good stead, and thanks to that habit I did not have actually to take to bed. While I was thus managing to keep going somehow, Mr. Polak handed me Adolf Just's book called *Return to Nature.* He himself did not follow Just's instructions, except that he tried to regulate his diet more or less according to Just's teaching. But knowing me as he did, he thought I would like the book.

14

Earth

Just lays great emphasis on the use of earth. I felt that I ought to give it a trial. For constipation, Just advises cold mud poultice on the lower abdomen throughout the night. The mud poultice should be 3 inches broad, 6 inches long and ½ inch thick. The result was most satisfactory. I had a natural well-formed motion the next morning and from that day onwards I have hardly ever touched fruit-salt. Occasionally, I feel the need of a purgative and take less than a dessert spoonful of castor oil early in the morning.

Mud Poultice

Just claims that mud can cure man bitten by a poisonous snake. He would pack wet earth all around the body. I mention this for what it is worth.

Headaches: I would like to put down here what I have tested and proved it for myself. It is my experience that a mud poltice applied to the head, relieves headache in most cases. I have tried it in hundreds of cases. Headache may be due to several causes, but whatever the cause, as a general rule, an application of mud poultice relieves it for the time being.

Ordinary boils: Mud poultices cure ordinary boils. I have applied mud to discharging abscesses as well. For these cases I prepare the poultice by packing the mud in a clean piece of cloth dipped in potassium permanganate lotion. In the majority of cases this treatment results in complete cure. I do not remember a single case in which it has failed me.

Bee Sting: Mud application immediately relieves the pain of a wasp sting. I have used it in many cases of scorpion bite though with much less success. I can say this that the results of mud application are not inferior to those of any other form of treatment.

Fever: In high fever, an application of mud poultice on the head and abdomen is very useful. Although it does not always bring down the temperature, it does invariably soothe the patient and makes him feel better, so that the patients themselves ask for these applications. I have used it in several cases of typhoid fever. The fever no doubt runs its own course but mud applications seem to relieve restlessness and abate the suffering. We have had about ten cases of typhoid fever. I have not used any drugs in the treatment of these cases. I have made use of other nature cure methods besides mud poultices, but about those in their own place.

How to Prepare Mud Poultices

In Sevagram we have made free use of hot mud poultices as substitute for anti-phlogistine. A little oil and salt is added to the mud and it is heated sufficiently long to ensure sterilization.

I have not told the reader what kind of earth should be used for mud poultices. In the beginning I used to procure sweet smelling clean red earth. It emits a delicate smell when it is mixed with water. But this kind of earth is not easy to obtain.

In cities like Bombay it is a problem to get any kind of earth. It is safe to use soft alluvial clay, which is neither gritty nor sticky. One should never use earth taken from soil which has manure mixed into it. Earth should be dried, pounded, and passed through a fine sieve. If there is any doubt as to its cleanliness, it should be well heated and thus sterilized. Mud used as a poultice on a clean surface need not be thrown away after use. It can be used again and again after drying it in the sun or on fire and pounding and sieving it. I am not aware that mud poultice made out of the same earth again and again as described above, is any the less efficacious. I have myself used it in this way and did not find it any the less efficacious for repeated use. Some friends who regularly use mud poultices tell me that mud from Yamuna banks is particularly good for this purpose.

Just writes that clean earth may be eaten in order to overcome constipation. Five to ten grams is the maximum dose. The rationale is said to be this. Earth is not digested. It acts as roughage and must pass out. The peristalsis thus stimulated pushes out of the faecal matter as well. I have not tried myself. Therefore those who wish to do so, should try it on their own responsibility. I am inclined to think that a trial or two is not likely to harm anyone.

15

Water

Hydrotherapy is a well-known and ancient form of therapy. Many books have been written on the subject, but in my opinion the form of hydrotherapy suggested by Louis Kuhne is simple and effective. Kuhne's book on nature cure is very popular in India. Andhra has the greatest number of Kuhne's followers. He has written a good deal about diet as well, but here I wish to confine myself to his experiments in hydrotherapy.

Hip bath and Sitz bath

Hip bath and sitz bath are the most important of Kuhne's contribution to hydrotherapy. He has devised a special tub for use though one can do without it. Any tub thirty to thirty six inches long according to the patient's height generally serves the purpose. Experience will indicate the proper size. The tub should be filled with fresh cold water so that it does not overflow when the patient sits in it.

In summer the water may be iced, if it is not cold enough, to give a gentle shock to the patient. Generally, water kept overnight in earthen jars serves the purpose. Water can also be cooled by putting a piece of cloth on the surface of the water and then fanning it vigorously. The tub should be kept against the bathroom wall and a plank put in the tub to serve as back rest. The patient should sit in the tub keeping his feet outside. Portions of the body outside the water should be kept well covered so that the patient does not feel cold. After the patient is comfortably seated in the tub, gentle friction should be applied to his abdomen with a soft towel. The bath can be taken for five to thirty minutes. When it is over, the body should be rubbed dry and the patient put to bed.

Hip bath brings down the temperature in high fever and given in the manner described above it never does any harm, and may do much good. It relieves constipation and improves digestion. The patient feels fresh and active after it. In cases of constipation, Kuhne advises a brisk walk for half an hour immediately after the bath. It should never be given on a full stomach.

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I have tried hip baths on a fairly large scale. They have proved efficacious in more than 75 cases out of 100. In case of hyperpyrexia (abnormally high fever), if the patient's condition permits of his being seated in the tub, the temperature immediately invariably falls at least by two to three degrees and, the onset of delirium is averted.

The rationale of the hip bath according to Kuhne is this:

Whatever the apparent cause of fever, the real cause in every case is one and the same, i.e. accumulation of waste matter in the intestines. The heat generated by the putrefaction of this waste matter is manifested in the form of fever and several other ailments. Hip bath brings down this internal fever so that fever and other ailments which are the external manifestations thereof subside automatically.

How far this reasoning is correct, I cannot say. It is for experts to do so.

Although the medical profession have taken up some things from nature cure methods, on the whole they have given cold shoulder to naturopathy. In my opinion both the parties are to be blamed for this state of affairs. The medical professionals have got into the habit of confining themselves to whatever is included in their own curriculum. They present an attitude of indifference, if not that of contempt, for anything that lies outside their groove. On the other hand, the proponents of nature cure nurse a feeling of grievance against the medicos and, in spite of their very limited scientific knowledge, make tall claims. They lack the spirit of cooperation and organization. Each one is self-satisfied and works by himself instead of pooling their resourses for the advancement of their system. No one tries to work in a scientific spirit all the implications and possibilities of the system. No one tries to cultivate humility, (if it is possible to cultivate humility).

I have not said all this in order to belittle the work of naturopaths. As a lay co-worker I wish them to see things in their true colour so that they may make improvements wherever possible. It is my conviction that so long as some dynamic personality, from among the naturopaths themselves, does not come forward with the zeal of missionary, things will continue as they are. Orthodox medicine has its own science, medical unions and teaching institutions. It has too a certain measure of success.

The public should know that the speciality of nature cure methods lies in the fact that being natural, they can be safely practiced by laymen. If a man, suffering from headache, wets a piece of cloth in cold water and wraps it round his head, it can do no harm. The addition of earth to cold water enhances the utility of the cold pack.

Sitz or Friction bath

Now about the sitz or friction bath. The organ of reproduction is one of the most sensitive parts of the body. There is something illusive about the sensitiveness of the glans penis and the foreskin. Any way, I know not how to describe it. Kuhne has made use of this knowledge for therapeutic purposes. He advises application of gentle friction to the outer end of the external sexual organ by means of a soft wet piece of cloth, while cold water is being poured. In the case of the male the glans penis should be covered with the foreskin before applying friction. The method advised by Kuhne is this:

A stool should be placed in a tub of cold water so that the seat is just about the level of the water in the tub. The patient should sit on the stool with his feet outside the tub and apply gentle friction to the sexual organ which just touches the surface of the water in the tub. This friction should never cause pain. On the contrary the patient should find it pleasant and feel rested and peaceful at the end of the bath.

Whatever the ailment, the sitz bath makes the patient feel better for the time being. Kuhne places sitz baths higher than hip baths. I have had much less experience of the former than of the latter. The blame, I think, lies mostly with myself. I have been lax. Those whom I advised sitz bath, have not been patient with the experiment, so that I cannot express an opinion on the efficacy of these baths, based on personal experience. It is worth a trial by every one. If there is any difficulty about finding a tub, it is possible to pour water from a jug or a *lota* and take the friction bath. It is bound to make the patient feel rested and peaceful.

Wet Sheet packs

A few words about wet sheet packs will not be out of place. It is very useful in pyrexia (fever) and insomnia. The method of giving wet sheet packs is this:

Spread three or four thick broad woollen blankets on a cot and on top of them a thick cotton sheet dipped in cold water with the water wrung out. The patient lies flat on the wet sheet with his head resting on a pillow outside the sheet. The wet sheet and the blankets are wrapped round the patient covering the whole body except the head which is covered with a damp towel treated after the manner of the wet sheet. The sheet and the blankets are wrapped round the patient, so that outside air cannot get inside. Though the patient feels a gentle shock when first laid in the wet sheet pack, he finds it pleasant afterwards. In a minute or two he begins to feel warm, unless the fever has become chronic, in about five minutes it begins to come down with sweating. In resistant cases I have kept the patient wrapped in the wet sheet pack up to half an hour. This has finally resulted in sweating. Sometimes, there is no sweating, but the patient goes off to sleep. In that case, he should not be awakened. The sleep indicates that the wet sheet pack has produced a soothing effect and he is quite comfortable. The temperature invariably falls at least by one or two degrees as a result of the wet sheet pack.

Wet sheet packs are also useful in the treatment of prickly heat, urticaria, other forms of skin irritation, measles, smallpox etc. I have tried them on a fairly large scale for these ailments. For smallpox and measles cases, I added enough potassium permanganate to the water to give it a light pink colour. The sheet used for these patients, should afterwards be sterilized by soaking it in boiling water and leaving it in it till it cools down sufficiently and then washed with soap and water.

Ice massage

In cases where circulation has become sluggish, the leg muscles feel sore and there is a peculiar ache and feeling of discomfort in the legs, an ice massage does a lot of good. This treatment is more effective in summer months. Massaging a weak patient with ice in winter might prove a risky affair.

Hot water therapy

Now a few words about the therapeutics of hot water.

An intelligent use of hot water gives relief in many cases. Application of iodine is a very popular remedy for all injuries and the like. Application of hot water will prove equally effective in most of these cases. Tincture of iodine is applied on swollen and bruised areas. Hot water fomentations are likely to give equal relief, if not more. Again, iodine drops are used in cases of earache. Irrigation of the ear with warm water is likely to relieve the pain in most of these cases. The use of iodine is attended with certain risks. The patient may have allergy towards the drug. Iodine mistaken for something else and taken internally might prove disastrous. But there is no risk whatsoever in using hot water. Boiling water is as good a disinfectant as tincture of iodine.

I do not mean to belittle the usefulness of iodine or suggest that hot water can replace it in all cases. Iodine is one of the few drugs which I regard most useful and necessary, but it is an expensive thing. The poor cannot afford to buy it and moreover its use cannot be safely entrusted to everybody. But water is available everywhere. We may not despise its therapeutic value because it is obtained so easily. Knowledge of common household remedies often proves a godsend in many a crisis.

In cases of scorpion bite where all remedies have failed, immersion of the part in hot water has been found to relieve the pain to a certain extent.

Steam

A shivering fit or a rigor can be made to subside by putting buckets of hot boiling water all around the patient who is well wrapped up or by saturating the atmosphere of the room with steam by some other device. A rubber hot water bag is a most useful thing, but it is not to be found in every household. A glass bottle with a well fitting cork, filled with hot water and wrapped in a piece of cloth, serves the same purpose. Care should be taken to choose bottles that will not crack on hot water being poured into them.

Steam is a more valuable therapeutic agent. It can be used to make the patient sweat. Steam baths are most useful in cases of rheumatism and other joint-pains. The easiest as well as the oldest method of taking steam bath is this:

Spread a blanket or two on a sparsely but tightly woven cot and put one or two covered vessels full with boiling water under it. Make the patient lie flat on the cot and cover him up in such a way that ends of the covering blankets touch the ground and thus prevent the steam from escaping and the outside air from getting in. After arranging everything as above, the lid from the vessels containing boiling water is removed and steam soon gets on to the patient lying between the blankets. It may be necessary to change the water once or twice. Usually in India people keep an *angithi* under the pots to keep the water boiling. This ensures continuous discharge of steam, but is attended with risk of accidents. A single spark might set fire to the blankets or to the cot and endanger the patient's life. Therefore, it is advisable to use the method described by me even though it might seem slow and tedious.

Some people add neem leaves or other herbs to the water used for generating steam. I do not know if such an addition increases the efficiency of steam. The object is to induce sweat and that is attained by mere steam.

In cases of cold feet or aching of legs, the patient should be made to sit with his feet and legs immersed up to the knees in as hot water as he can bear. A little mustard powder can be added to the water. The foot bath should not last for more than fifteen minutes. This treatment improves the local circulation and gives immediate relief.

In cases of common cold and sore throat a steam kettle which is very much like an ordinary tea kettle with a long nozzle can be used for applying steam to the nose or throat. A rubber tube of required length can be attached to any ordinary kettle for this purpose.

16

Akash (Ether)

Akash is a difficult word to translate as are indeed all the other four elements so-called. For *pani* is not mere water in the original, nor *vayu* wind, or *prithvi* earth, or *teja* light, and least of all *akash* is ether. Perhaps the nearest equivalent is emptiness taken in its literal sense. And it is horribly inexpressive of the original. All the five in the original are as living as life. If however we take ether as the nearest equivalent for *akash*, we must say that we know very little about ether itself and *akash* much less. Our knowledge of its therapeutic uses is still more limited. Akash might be taken for the empty space surrounding the earth and the atmosphere round it. On a clear day, on looking up, one sees a beautiful mauve blue canopy which is known as the *akash* or sky. So far as we are concerned, this sky or the ether is limitless. We are surrounded by it on every side, and there is no nook or corner without it.

We move round and round with the earth. Therefore the *akash* is round and everybody is within it. It is an envelope whose outermost surface is measureless. The lower strata of the *akash* for a number of miles, are filled with air. But for this, man would become suffocated. True, we cannot see the air, but we can feel it when in motion. Sky or the ether is the abode of atmosphere. One can pump out air say from an empty bottle and create a vacuum, but who can pump out the vacuum itself? That is *akash*.

We have this *akash* to make use of for maintaining or for regaining our health. Air being most essential to sustain life, nature has made it omnipresent. But the omnipresence of air is only relative. It is not limitless in reality. Scientists tell that after a certain number of miles above the earth there is no air. It is said that earthy creatures cannot exist outside this atmosphere. This statement may or may not be true. All that we are concerned with here is that *akash* extends beyond the atmosphere. Someday the scientists might prove that what we call ether is also something which fills the empty space *akash*. Then we will have to discover a new name for the empty space that holds neither air nor the ether.

This much might be said that the more we utilize this great element *akash* the healthier we will be. The first lesson to be learnt is this that we should not put any partitions between ourselves and the sky — the infinite — which is very near and yet very far away. If our bodies could be in contact with the sky without the intervention of houses, roofs and even clothes, we are likely to enjoy the maximum amount of health. This is not possible for everyone. But all can and should accept the validity of the statement and adapt life accordingly. To the extent that we are able to approach the state in practice, we will enjoy contentment and peace of mind.

This train of thought taken to the extreme leads us to a condition when even the body becomes an obstacle separating man from the infinite. To understand this truth is to become indifferent to the dissolution of the body — for to lose oneself in the infinite is to find oneself. The body thus ceases to be a vehicle for self-indulgence. Man will make use of his body for the realisation of this unity with the infinite. In the course of the attempt he will discover that he is part of and one with all the life that surrounds him. This must mean service of mankind and through it finding God.

To return from the high flight, this train of thought will make the thinker keep his surrounding as open as possible. He will not fill the house with unnecessary furniture and will use the minimum of clothes that are necessary. Many households are so packed with all sorts of unnecessary decorations and furniture which one can very well do without; that a simple living man will feel suffocated in those surroundings. They are nothing but means of harbouring dust, bacteria and insects. Here in the house where I am under detention[1], I feel quite lost. The heavy furniture, chairs, tables, sofas, bedsteads, innumerable looking-glasses, all get on my nerves. The expensive carpets on the floors collect large amount of dust and act as a breeding place for insect life. One day the carpet in one of the rooms was taken out for dusting. It was not one man's work. Six men spent the afternoon in doing the job. They must have removed at least ten pounds of dust. When the carpet was put back in its place it had a new feel about it.

What I mean to say is this that my desire to be in tune with the infinite has saved me from many complications in life. It led not merely to simplicity of house hold and dress but all round simplicity in the mode of my life. In a nutshell, and in the language of the subject under discussion, I have gone on creating more and more contact with *akash*. With the increase in the contact went improvement in health. I had more contentment and peace of mind and the desire for belongings almost disappeared. He who will establish contact with the infinite possesses nothing and yet possesses everything. In the ultimate analysis, man owns that of which he can make legitimate use and which he can assimilate. If everybody followed this rule, there would be room enough for all and there would be neither want nor overcrowding.

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[1] Gandhi, Kasturba and other Congress leaders were arrested on August 9, 1942 and imprisioned in Aga Khan Palace, Yeravda near Pune.

It follows that one should make it a point to sleep in the open. Sufficient covering should be used to protect oneself against the inclemencies of the weather, against cold and dew. For the rest, the starlit blue canopy should form the roof so that whenever one opens one's eyes, he or she can feast them on the ever changing beautiful panorama of the heavens. He will never tire of the scene and it will not dazzle or hurt his eyes. On the contrary, it will have a soothing effect on him. To watch the different starry constellations floating in their majesty is a feast for the eyes. One who establishes contact with the stars as living witnesses to all his thoughts will never allow any evil or impurity to enter his mind and will enjoy peaceful, refreshing sleep.

Let us descend from the *akash* above to the *akash* within and immediately about us. Thus the skin has millions of pores. If we fill up the empty space within these pores, we simply die. Any clogging in the pores therefore must interfere with the even flow of health. Similarly we must not fill up the digestive tract with unnecessary foodstuffs. We should eat only as much as we need and no more. Often one overeats or eats indigestible things without being aware of it. An occasional fast, say once a week or once a fortnight, will enable to keep the balance even. If one is unable to fast for the whole day, one should miss one or more meals during the day. That nature abhors a vacuum is only partially true. Nature constantly demands a vacuum. The vast space surrounding us is the standing testimony of the truth.

17

Sun

As in the case of the other elements, which have been already dealt with, man cannot do without sunlight. The sun is the source of light and heat. If there was no sun, there would be neither light nor warmth. Unfortunately we do not make full use of sunlight and consequently we are unable to enjoy perfect health.

Sunbath is as useful as ordinary water bath though the two cannot replace one another. In cases of debility and slow circulation, exposure of the uncovered body to the morning sun acts as an all-round general tonic and accelerates the metabolism.

The morning sun has the largest amount of ultraviolet rays which are a most effective component of the sun's rays. If the patient feels cold, he should lie in the sun covered up and gradually expose more and more of his body as he gets used to it. One can also take the sunbath pacing up and down in the sun without any clothes on, in a private enclosure or in any other place away from public gaze. If such a place is not within easy reach, one can just cover up the private parts by tying up a piece of cloth or a *langoti* and expose the rest of his body to the sun.

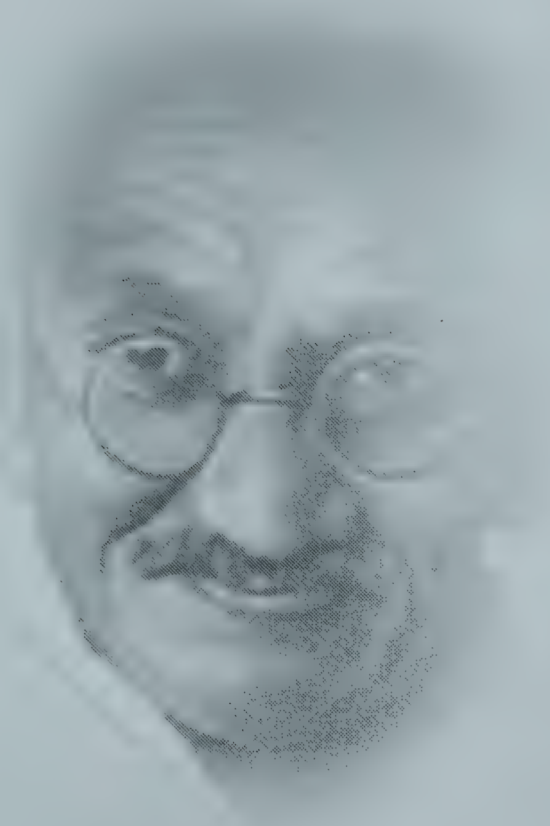
I know of many persons who have been benefited by sunbaths. It is a well-known treatment for tuberculosis. Sunbaths or heliotherapy is no longer confined to the sphere of naturopathy. Orthodox medicine has taken it up from naturopathy and developed it further. In cold countries, special glass buildings have been constructed under medical supervision, so that the glass lets in the sun's rays and at the same time protects patients against the cold.

Sun treatment often results in the cure of intractable ulcers. To produce sweating, I have made patients lie in the sun at about 11 a.m., i.e. a little before midday. The experiment has been successful and the patients are soon bathed in sweat. In these cases the head should be protected from the sun by means of a cold mud poultice. Banana or any other leaves can be used to cover up the head and face and thus further help in keeping the head cool and well protected. The head should never be exposed to strong sunlight.

18

Air

This fifth element (air) is as important as the four already discussed in the foregoing pages. The human body which is composed of the five elements cannot do without any one of them. Therefore no one should be afraid of air. Generally, wherever our people go, they make devices to keep out the sun and the air and thus jeopardize their health. If one cultivates the habit of living in the open in the midst of plenty of fresh air, right from childhood, the body will become hardened and he or she will never suffer from cold in the head and the like ailments.



My Experiments with Nature Cure

Illness or disease is only Nature's warning that filth has accumulated in some portion or other of the body; it would surely be the part of wisdom to allow Nature to remove the filth, instead of covering it up by the help of medicines.

19

Faith on Its Trial

My second son, Manilal, who had already been through an acute attack of smallpox some years back, had a severe attack of typhoid, combined with pneumonia and signs of delirium at night.

The doctor was called in. He said medicine would have little effect, but eggs and chicken broth might be given with profit.

Manilal was only ten years old. To consult his wishes was out of the question. Being his guardian I had to decide. The doctor was a very good Parsi. I told him that we were all vegetarians and that I could not possibly give either of the two things to my son.

I knew Kuhne's treatment and had tried it. I knew as well that fasting also could be tried with profit. So I began to give Manilal hip baths according to Kuhne, never keeping him in the tub for more than three minutes, and kept him on a diet of orange juice mixed with water for three days.

But the fever persisted with the temperature going up to 104° F. At night he would be delirious. I began to get anxious.

What would people say of me? What would my elder brother think of me? Could we not call in another doctor? Why not have an Ayurvedic physician? What right had the parents to inflict their fads on their children?

I was haunted by thoughts like these. Then a contrary current would start. God would surely be pleased to see that I was giving the same treatment to my son as I would give myself. I had faith in hydropathy and little faith in allopathy. The doctors could not guarantee recovery. At best they could experiment. The thread of life was in the hands of God. Why not trust it to Him and in His name go on with what I thought was the right treatment?

My mind was torn between these conflicting thoughts. It was night. I was in Manilal's bed lying by his side. I decided to give him a wet sheet pack. I got up, wetted a sheet, wrung the water out of it and wrapped it about Manilal, keeping only his head out and then covered him with two blankets. To the head I applied a wet towel. The whole body was burning like hot iron, and quite parched. There was absolutely no perspiration.

I was sorely tired. I left Manilal in the charge of his mother, and went out for a walk on Chaupati to refresh myself. It was about ten o'clock. Very few pedestrians were out. Plunged in deep thought, I scarely looked at them. 'My honour is in thy keeping, Oh Lord, in this hour of trial,' I repeated to myself. Ramanama was on my lips. After a short time I returned, my heart beating within my breast.

No sooner I entered the room than Manilal said, 'You have returned, Bapu?'

'Yes darling.'

'Do please pull me out. I am burning.'

'Are you perspiring, my boy?'

'I am simply soaked, do please take me out.'

I felt his forehead. It was covered with beads of perspiration. The temperature was going down. I thanked God.

'Manilal, your fever is sure to go now. A little more perspiration and then I will take you out.'

'Pray, no. Do deliver me from this furnace. Wrap me some other time if you like.'

I just managed to keep him under the pack for a few minutes more by diverting him. The perspiration streamed down his forehead. I undid the pack and dried his body. Father and son fell asleep in the same bed.

And each slept like a log. Next morning Manilal had much less fever. He went on thus, on a diet of diluted milk and fruit juices for forty days. I had no fear now. It was an obstinate type of fever, but it had been got under control.

Today Manilal is the healthiest of my boys. Who can say whether his recovery was due to God's grace, or to hydropathy, or to careful dietary and nursing? Let everyone decide according to his own faith. For my part I was sure that God had saved my honour, and that belief remains unaltered to this day.

20

Experiments in Earth and Water Treatment

With the growing simplicity of my life, my dislike for medicines steadily increased. While practising in Durban, I suffered for some time from debility and rheumatic inflammation. Dr. P.J. Mehta, who had come to see me, gave me treatment, and I got well. After that, up to the time when I returned to India, I do not remember having suffered from any ailment to speak of.

But I used to be troubled with constipation and frequent headaches, while at Johannesburg. I kept myself fit with occasional laxatives and a well-regulated diet. But I could hardly call myself healthy, and always wondered when I should get free from the incubus of these laxative medicines.

About this time I read of the formation of a ‘No Breakfast Association’ in Manchester. The argument of the promoters was that Englishmen ate too often and too much, that their doctors’ bills were heavy because they ate until midnight, and that they should at least give up breakfast, if they wanted to improve this state of affairs. Though all these things could not be said of me, I felt that the argument did partly apply in my case. I used to have three square meals daily in addition to afternoon tea. I was never a spare eater and enjoyed as many delicacies as could be had with a vegetarian and spiceless diet. I scarcely ever got up before six or seven. I therefore argued that, if I also dropped the morning breakfast, I might become free from headaches. So I tried the experiment. For a few days it was rather hard, but the headaches entirely disappeared. This led me to conclude that I was eating more than I needed.

But the change was far from relieving me of constipation. I tried Kuhne's hip baths, which gave some relief but did not completely cure me. In the meantime the German who had a vegetarian restaurant, or some other friend, I forget who, placed in my hands Adolf Just's *Return to Nature.* I read about earth treatment. The author also advocated fresh fruit and nuts as the natural diet of man. I did not at once take the exclusive fruit diet, but immediately began experiments in earth treatment, and with wonderful results. The treatment consisted in applying to the abdomen a bandage of clean earth moistened with cold water and spread like a poultice on fine linen. This I applied at bedtime, removing it during the night or in the morning, whenever I happened to wake up. It proved a radical cure. Since then I have tried the treatment on myself and my friends and never had reason to regret it. In India I have not been able to try this treatment with equal confidence. For one thing, I have never had time to settle down in one place to conduct the experiments. But my faith in earth and water treatment remains practically the same as before. Even today I give myself the earth treatment to a certain extend and recommend it to my co-workers, whenever occasion arises.

Though I have had two serious illnesses in my life, I believe that man has little need to drug himself. 999 cases out of a thousand can be brought round by means of a well-regulated diet, water and earth treatment and similar household remedies. He who runs to the doctor, *vaid* or *hakim* for every little ailment, and swallows all kinds of vegetables and mineral drugs not only curtails his life, but, by becoming the slave of his body instead of remaining its master, loses self-control, and ceases to be a man.

Let no one discount these observations because they are being written in a sickbed. I know the reasons for my illness. I am fully conscious that I alone am responsible for them, and it is because of that consciousness that I have not lost patience. In fact I have thanked God for them as lessons and successfully resisted the temptation of taking numerous drugs. I know my obstinacy often tries my doctors, but they kindly bear with me and do not give me up.

However, I must not digress. Before proceeding further, I should give the reader a word of warning. Those who purchase Just's book on the strength of this chapter should not take everything in it to be gospel truth. A writer almost always presents one aspect of a case, whereas every case can be seen from no less than seven points of view, all of which are probably correct by themselves, but not correct at the same time and in the same circumstances. And then many books are written with a view to gaining customers and earning name and fame. Let those, therefore, who read such books as these do so with discernment, and take advice of some experienced man before trying any of the experiments set forth, or let them read the books with patience and digest them thoroughly before acting upon them.

21

Treating Ramdas's Fractured Arm

On the boat bringing them (my wife and the children) to South Africa, Ramdas, my third son, broke his arm while playing with the ship's captain. The captain looked after him well and had him attended to by the ship's doctor. Ramdas landed in India with his hand in a sling. The doctor had advised that, as soon as we reached home, the wound should be dressed by a qualified doctor. But this was the time when I was full of faith in my experiments in earth treatment. I had even succeeded in persuading some of my clients who had faith in my quackery to try the earth and water treatment.

What then was I to do for Ramdas? He was just eight years old. I asked him if he would mind my dressing his wound. With a smile he said he did not mind at all. It was not possible for him at that age to decide what was the best thing for him, but he knew very well the distinction between quackery and proper medical treatment. And he knew my habit of home treatment and had faith enough to trust himself to me. In fear and trembling I undid the bandage, washed the wound, applied a clean earth poultice and tied the arm up again. This sort of dressing went on daily for about a month until the wound was completely healed. There was no hitch, and the wound took no more time to heal than the ship's doctor had said it would under the usual treatment.

This and other experiments enhanced my faith in such household remedies, and I now proceeded with them with more self-confidence. I widened the sphere of their application, trying the earth and water and fasting treatment in cases of wounds, fevers, dyspepsia, jaundice and other complaints, with success on most occasions. But nowadays I have not the confidence I had in South Africa, and experience has even shown that these experiments involve obvious risks.

The reference here, therefore, to these experiments is not meant to demonstrate their success. I cannot claim complete success for any experiment. Even medical men can make no such claims for their experiments. My object is only to show that he who would go in for novel experiments must begin with himself. That leads to a quicker discovery of truth, and God always protects honest experimenter.

22

How I Treated Kasturba's Haemorrhage

Now it happened that Kasturba, who had a brief respite, after her operation, had again begun getting haemorrhage, and the malady seemed to be obstinate. Hydropathic treatment by itself did not answer. She had not much faith in my remedies, though she did not resist them. She certainly did not ask for outside help. So when all my remedies had failed, I entreated her to give up salt and pulses. She would not agree, however much I pleaded with her, supporting myself with authorities. At last she challenged me, saying that even I could not give up these articles if I was advised to do so. I was pained and equally delighted — delighted in that I got an opportunity to shower my love on her. I said to her: 'You are mistaken. If I was ailing and the doctor advised me to give up these or any other articles, I should unhesitatingly do so. But there! Without any medical advice. I give up salt and pulses for one year, whether you do so or not.'

She was rudely shocked and exclaimed, in deep sorrow: 'Pray forgive me. Knowing you, I should not have provoked you. I promise to abstain from these things, but for heaven's sake take back your vow. This is too hard on me.'

'It is very good for you to forego these articles. I have not the slightest doubt that you will be all the better without them. As for me, I cannot retract a vow seriously taken. And it is sure to benefit me, for all restraint, whatever prompts it, is wholesome for men. You will therefore leave me alone. It will be a test for me, and moral support to you in carrying out your resolve.'

So she gave me up. 'You are obstinate. You will listen to none,' she said, and sought relief in tears.

After this Kasturba began to pick up quickly — whether as a result of the saltless and pulseless diet or of the other consequent changes in her food, I cannot say. But she rallied quickly, haemorrhage completely stopped, and I added somewhat to my reputation as a quack.

23

Saved by Ice Doctor

I very nearly ruined my constitution during the recruiting campaign[1]. In those days my food principally consisted of groundnut butter and lemons. I knew that it was possible to eat too much butter and injure one's health, and yet I allowed myself to do so. This gave me a slight attack of dysentery. I did not take serious notice of this, and went that evening to the Ashram, as was my wont every now and then. I scarcely took any medicine those days. I thought I should get well if I skipped a meal, and indeed I felt fairly free from trouble as I omitted the morning meal the next day. I knew, however, that to be entirely free I must prolong my fast and, if I ate any thing at all, I should have nothing but fruit juices.

There was some festival that day, and although I had told Kasturba that I should have nothing for my midday meal, she tempted me and I succumbed. As I was under a vow of taking no milk or milk products, she had specially prepared for me a sweet wheaten porridge with oil added to it instead of *ghee.* She had reserved too a bowlful my *mung* for me. I was fond of these things, and I readily took them, hoping that without coming to grief I should eat just enough to please Kasturba and to satisfy my palate. But the devil had been only waiting for an opportunity. Instead of eating very little I had my fill of the meal. This was sufficient invitation to the angel of death. Within an hour the dysentery appeared in acute form.

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[1] In 1918 when World War I was going badly for the British, Gandhi actively supported their drive to recruit Indian soldiers to fight alongwith English troops.

All the friends surrounded me deeply concerned. They were all love and attention, but they could not relieve my pain. And my obstinacy added to their helplessness. I refused all medical aid. I would take no medicine, but preferred to suffer the penalty for my folly. So they looked on in helpless dismay. I must have had thirty to forty motions in twenty-four hours. I fasted, not taking even fruit juices in the beginning. The appetite had all gone. I had thought all along that I had an iron frame, but I found that my body had now become a lump of clay. It had lost all power of resistance. The motions still continued, leaving me completely exhausted. The exhaustion brought on a delirious fever. The friends got more nervous, and called in more doctors. But what could they do with a patient who would not listen to them?

I had now been trying hydropathy which gave some relief, but it was a hard job to build up the body. The many medical advisers overwhelmed me with advice, but I could not persuade myself to take anything. One night, I gave myself up to despair. I felt that I was at death's door.

Whilst I lay thus ever expectant of death, Dr. Talvalkar came one day with a strange creature. He hailed from Maharashtra. He was not known to fame, but the moment I saw him I found that he was a crank like myself. He had come to try his treatment on me. He swears by the ice treatment, which he wanted to try on me. We gave him the name of 'Ice Doctor'. He is quite confident that he has discovered certain things which have escaped qualified doctors. It is a pity both for him and me that he has not been able to infect me with his faith in his system. I believe in his system up to a certain point, but I am afraid he has been hasty in arriving at certain conclusions.

But whatever may be the merits of his discoveries, I allowed him to experiment on my body. I did not mind external treatment. The treatment consisted in the application of ice all over the body. Whilst I am unable to endorse his claim about the effect his treatment had on me, it certainly infused in me a new hope and a new energy, and the mind naturally reacted on the body. I began to have an appetite and to have a gentle walk for five to ten minutes. The improvement was enough to give me interest in public activities.

24

Care of the Child

I do not propose in this chapter to describe the duties of a midwife or wet nurse, but only to point out how the child should be cared for after birth. As the health of the child will depend entirely on that of the mother, special attention must be paid to her diet and mode of living. If she is fed on wheat, with plenty of good fruits like the plantain (banana), and olive oil she would feel warm and strong, and have plenty of milk. Olive oil gives aperient properties to the mother's milk, and thus serves to keep the child free from constipation.

If the child is unwell, attention must be turned to the state of the mother's health. Administering drugs to the child is as good as murdering it, for the child with its delicate constitution, easily succumbs to their poisonous effects. Hence the medicine should be administered to the mother, so that its beneficial properties may be transmitted to the child through her milk. If the child suffers, as it often does, from cough or loose bowels, there is no cause for alarm; we should wait for a day or so, and try to get at the root of the trouble, and then remove it. Making fuss over it and falling into a panic only makes matters worse.

The child should invariably be bathed in tepid water. Its clothing should be as little as possible; for a few months it is best to have none at all. The child should be laid on a thin soft white sheet and covered with a warm cloth. This will obviate the need for the use of shirts, prevent the clothes from getting dirty, and make the child hardy and strong. A fine piece of cloth folded into four should be placed over the navel-string, and kept in position by a band over it. The practice of tying a thread to the navel-string and hanging it round the neck is highly injurious. The navel-band should be kept loose. If the part round the navel be moist, fine well-sifted flour may be gently applied over it.

As long as the supply of the mother's milk is sufficient, the child should be fed exclusively on it; but, when it gets insufficient, fried wheat well powdered, and mixed with hot water and a little of jaggery, may be used as a substitute with quite good results. Half a plantain well mashed and mixed with half a spoonful of olive oil is also particularly beneficial. If cow's milk has to be given, it should at first be mixed with water in the proportion of three to one, and then heated until it just begins to boil, then a little of pure jaggery should also be added. The use of sugar instead of jaggery is harmful. The child should gradually be accustomed to a fruit-diet, so that its blood may be kept pure from the very beginning, and it may grow manly and bright. Those mothers who begin to feed their children on things like rice, vegetables and *dhall*, as soon as or even before its teeth have appeared, are doing them infinite harm. Needless to say, coffee and tea should be strictly eschewed.

When the child has grown big enough to walk, it may be clothed with *kurta* and the like, but its feet should still be kept bare, so that it may be free to roam about at will. The use of shoes prevents the free circulation of blood and the development of hardy feet and legs. Dressing the child in silk or lace cloths, with cap and coat, and ornaments, is a barbarous practice. Our attempt to enhance by such ridiculous means the beauty that Nature has given only bespeaks our vanity and ignorance. We should always remember that the education of the child really begins from its very birth, and is best given by the parents themselves. The use of threats and punishments, and the practice of gorging the children with food, are an outrage on the principles of true education. As the old saying has it, 'like parent, like child'; hence the example and practice of the parents necessarily shape the conduct and character of the children. If they are weaklings, their children also grow up weak and delicate; if they talk clearly and distinctly, so too will the children; but if they talk with a lisp, the children will also learn to do so. If they use foul language, or are addicted to bad habits, the children necessarily imitate them, and develop into bad characters. In fact, there is no field of human activity in which the child does not imitate the example of its parents.

We see, then, how heavy is the responsibility that rests on the shoulders of parents. The very first duty of a man is to give such education to his children as will make them honest and truthful, and an ornament to the society in which they live. It is the solemn duty of all virtuous parents to train their children in noble ways. This requires that both the father and the mother should themselves have received a sound education. Where the parents lack such education and are aware of their imperfections, it is their duty to entrust their children to the care of proper guardians. It is foolish to expect that a high character can be developed in the children by merely sending them to school. Where the training given at school is inconsistent with that given at home, there can be no hope of improvement for the child.

Let all thoughtful parents ponder well over these matters; for on them depends the future of our land.

25

Burns and Scalds

Very often when a man's clothes catch fire, we get into a panic, and, instead of helping the injured, make matters worse by our ignorance. It is our duty, therefore, to know exactly what to do in such cases.

The person whose clothes have caught fire should not lose his presence of mind. If the fire is only at one edge of the cloth, it should at once be squeezed out with the hands; but if it has spread over the whole cloth or a large portion of it, the man should at once lie down and roll on the floor. If a thick cloth like a carpet be available, it should at once be wrapped round his body; and if water is at hand, it should also be poured over it.

As soon as the fire has been put out, we should find out if there are burns in any part of the body. The cloth would generally stick to the body where there are burns, in which case it should not be forcibly torn off, but gently snipped off with a pair of scissors, leaving the affected parts undisturbed, and taking care to see that the skin does not come off. Immediately after this, poultices of pure mud should be applied to all these places, and kept in position by bandages. This will instantly relieve the burning, and ease the patient's suffering. The poultices may as well be applied over the portions of the cloth which stick on to the body. They should be renewed as soon as they begin to get dry; there is no reason to fear the touch of cold water.

Where this sort of first aid has not been rendered, the following directions will be found very useful.

Fresh plantain leaves well smeared with olive or sweet oil should be applied over the burns. If plantain leaves are not available, pieces of cloth may be used. A mixture of linseed oil and lime-water in equal proportions may also be applied with great advantage. The portions of cloth which adhere to the burns may be easily removed by moistening them with a mixture of tepid milk and water. The first bandage of oil should be removed after two days, and afterwards fresh bandages applied every day. If blisters have formed on the burnt surface, they should be pricked, but the skin need not necessarily be removed.

If the skin has simply got red by the burn, there is no more effective remedy than the application of a mud poultice. If the fingers have been burnt, care should be taken, when the poultice is applied, that they do not touch against one another. This same treatment may be applied in cases of acid-burns and scalds of every description.

26

Fever and its Cure

We generally apply the term 'fever' to a condition of heat in the body, but English doctors have distinguished many varieties of this disease, each with its own system of treatment. But, following the common practice and the principles elaborated in this chapter, we may say that all fevers can be cured in one and the same manner. I have tried this single treatment for all varieties from simple fever up to Bubonic Plague, with invariably satisfactory results.

In 1904, there was a severe outbreak of plague among the Indians in South Africa. It was so severe that, out of 23 persons that were affected, as many as 21 died within the space of 24 hours; and of the remaining two, who were removed to the hospital, only one survived, and that one was the man to whom the mud-poultice was applied. We cannot, of course, conclude from this that it was the mud-poultice that saved him, but, in any case, it is undeniable that it did him no harm. They were both suffering from high fever brought on by inflammation of the lungs, and had been rendered unconscious. The man on whom was tried the mud-poultice was so bad that he was spitting blood, and I afterwards learnt from the doctor that he had been insufficiently fed on milk alone.

As most fevers are caused by disorders of the bowels, the very first thing to do is to starve the patient. It is a mere superstition that a weak man will get weaker by starving. As we have already seen, only that portion of our food is really useful which is assimilated into the blood, and the remainder only clogs the bowels. In fever the digestive organs are very weak, the tongue gets coated, and the lips are hard and dry. If any food is given to the patient in this condition, it will remain undigested and aid the fever. Starving the patient gives his digestive organs time to perform their work; hence the need to starve him for a day or two.

At the same time, he should take at least two baths every day according to the Kuhne's system. If he is too weak or ill to bathe, a mud-poultice should be applied to his abdomen. If the head aches or feels too hot, a poultice should also be applied to the head.

The patient should, as far as possible, be placed in the open air, and should be well covered. At meal-time, he should be given the juice of lime, well filtered and mixed with cold or boiling water, and if possible, without any sugar. This has a very beneficial effect, and should alone be given if the patient's teeth can bear its sourness. Afterwards, he may be given a half or the whole of a plantain, well mixed with a spoon of olive oil, mixed with a spoon of lime juice. If he feels thirsty, he should be given boiled water which has been cooled, or the juice of lime, never water which has not been boiled.

The clothes of the patient should be as few as possible, and should be frequently changed. Even persons suffering from typhoid and the like diseases have been completely cured by this simple treatment, and are enjoying perfect health at present. A seeming cure may also be affected by quinine, but it really brings other diseases in its train wheras I have actually seen several cases of malarial patients being permanently cured by the treatment described above.

Many people subsist on milk alone during fever, but my experience is that it really does harm in the initial stages, as it is hard to digest. If milk has to be given, it is best given in the form of 'wheat-coffee', (see also page 43) or with a small quantity of rice-flour well boiled in water; but in extreme forms of fever, it ought not to be given at all. In such a condition, the juice of lime may always be given with great success. As soon as the tongue gets clean, plantain may be included in the diet, and given in the form described above. If there be constipation, a hot-water enema with borax should be applied in preference to purgatives, after which a diet of olive oil will serve to keep the bowels free.

27

Constipation, Dysentery, Gripes and Piles

It may at first sight appear strange to have four different ailments put together in this chapter, but, as a matter of fact, they are all so closely connected, and may be cured more or less in the same way. When the stomach gets clogged by undigested matter, it leads to one or other of these diseases, according to the varying constitutions of individuals. In some it produces constipation. The bowels do not move, or move only partly and there is great straining at stools, until it results in bleeding, or at times in the discharge of mucus, or piles. In others, it leads to diarrhoea, which often ends in dysentery. In others again, it may give rise to gripes, accompanied by pain in the stomach and the discharge of mucus.

In all these cases, the patient loses his appetite, his body gets pale and weak, his tongue gets coated, and his breath foul. Many also suffer from headache and other complaints.

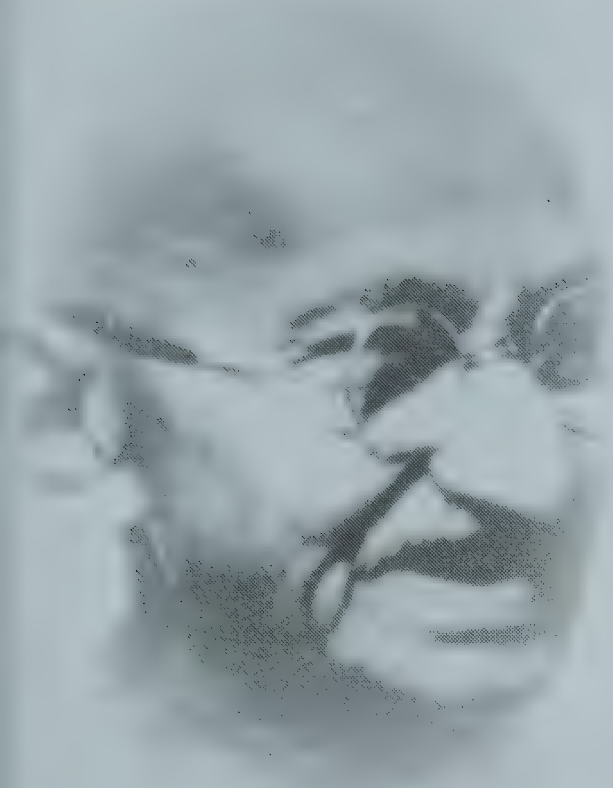
Constipation, indeed, is so common that hundreds of pills and powders have been invented to cure it. The chief function of such patent medicines is to relieve constipation, and hence thousands of people go in for them in the vain hope of being cured for good. Any *vaidya* or *hakim* will tell you that constipation and the like are the result of indigestion, and that the best way to cure them is to remove the causes of indigestion; but the more candid among them will confess that they are forced to manufacture pills and powders, since the patients are not really prepared to renounce their bad habits, but at the same time want to get cured. Indeed the present-day advertisments of such medicines go to the extent of promising to those that would buy them that they need observe no directions as to diet and the like, but may eat and drink whatever they like. But my readers need not be told that this is a mere string of lies.

All purgatives are invariably injurious to health. Even the mildest of them, even if they relieve the constipation, give rise to other forms of disease. If they should do any good at all, the patient should thoroughly change his ways of life, so as not to have to turn to purgatives again; otherwise, there can be no doubt that they must give rise to new diseases, even supposing that they serve to get rid of the old.

The very first thing to do in cases of constipation and the like is to reduce the quantity of food, especially such heavy things as *ghee,* sugar and cream of milk. Of course, he should eschew altogether wine, tobacco, *bhang,* tea, coffee, cocoa, and loaves made of 'mill flour'. The diet should consist for the most part of fresh fruits with olive oil.

The patient should be made to starve for 36 hours before treatment begins. During this time and after, mud-poultices should be applied to the abdomen during sleep; and, as has been already said, one or two 'Kuhne baths' should also be taken. The patient should be made to walk for at least two hours every day. I have myself seen severe cases of constipation, dysentery, piles and gripes effectively cured by this simple treatment. Piles may not, of course, completely disappear, but they will certainly cease to give trouble. The sufferer from gripes should take special care not to take any food except lime-juice in hot water, so long as there is discharge of blood or mucus. If there is excessive griping pain in the stomach, it can be cured by warming with a bottle of hot water or a piece of well-heated brick. Needless to say, the patient should live constantly in the open air.

Fruits like the French plum, the raisin, the orange and the grape, are particularly useful in constipation. This does not, of course, mean that these fruits may be eaten even where there is no hunger. They ought not to be eaten at all in cases of gripes accompanied by a bad taste in the mouth.



Food and Diet Reform

Food is essential for bodily health. It is necessary that we should be diet-conscious and should concern ourselves with feeding the body with the kind of food it requires.

28

Healthy Diet

From the point of view of diet, the whole mankind may be divided into three broad divisions.

1. The first class, which is the largest, consists of those who, whether by preference or out of necessity, live on an exclusive vegetable diet. Under this division come the best part of India, a large portion of Europe, and China and Japan. The staple diet of the Italians is macaroni, of the Irish potato, of the Scotch oatmeal, and of the Chinese and Japanese rice.

2. The second class consists of those who live on a mixed diet. Under this class come most of the people of England, the richer classes of China and Japan, the richer Mussulmans of India, as well as those rich Hindus who have no religious scruples about taking meat.

3. To the third class belong the peoples of the frigid zones, who live on an exclusive meat diet. These are not very numerous, and they also introduce a vegetable element into their diet, wherever they come in contact with the races of

Europe. Man, then, can live on three kinds of diet; but it is our duty to consider which of these is the healthiest for us.

An examination of the structure of the human body leads to the conclusion that man is intended by Nature to live on a vegetable diet. There is the closest affinity between the organs of the human body and those of the fruit-eating animals. The monkey, for instance, is so similar to man in shape and structure, and it is a fruit-eating animal. Its teeth and stomach are just like the teeth and stomach of man. From this we may infer that man is intended to live on roots and fruits, and not on meat.

Scientists have found out by experiments that fruits have in them all the elements that are required for man's sustenance. The plantain, the orange, the date, the grape, the apple, the almond, the walnut, the groundnut, the coconut — all these fruits contain a large percentage of nutritious elements. These scientists even hold that there is no need for man to cook his food. They argue that he should be able to subsist very well on food cooked by the Sun's warmth, even as all the lower animals are able to do; and they say that the most nutritious elements in the food are destroyed in the process of cooking, and that those things that cannot be eaten uncooked could not have been intended for our food by Nature.

If this view be correct, it follows that we are at present wasting a lot of our precious time in the cooking of our food. If we could live on uncooked food alone, we should be saving so much time and energy, as well as money, all of which may be utilised for more useful purposes.

29

Are you Acidic?

Dr H.C. Menkel[1]

Quite frequently one hears the remark during a discussion about health, 'The doctor says I am too acidic.' Just what does it mean being too acidic? And how does one become acidic?

Being acidic or having acidosis is only a relative term. There is no such experience in actual life as a person being acidic and still remaining conscious to tell about his acidosis. Acidity of the body tissues means death. The life process, and therefore, all the essential phases pertaining to health, well-being, and resistance are predominantly alkaline.

The human body represents a precarious organization of matter. Chemical study of the body materials reveals eighty parts alkali, and twenty parts acid. This relationship of four to one is the basic secret of health, normal functional activities, and efficient old age.

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[1] Dr. H.C. Menkel was a missionary doctor from Boulder Colorado, America who came to India in 1907; he first served in Calcutta and in 1914 moved to Simla and served as a medical missionary. The institution he served is today known as The Simla Sanitarium Hospital.

All our practices, habits, customs, indulgences or deficiencies, both physical and mental, either promote or disturb this eighty-twenty ratio. However, the most determining factors for acid or for alkali formation are contained in food and drink. These are:

Acid Forming and Alkali Forming Minerals

Acid Forming	Alkali Forming
Arsenic	Calcium
Bromine	Copper
Chlorine	Iron
Flourine	Magnesium
Iodine	Manganese
Phosphorus	Potassium
Silicon	Sodium
Sulphur	Zinc

These several mineral elements are so arranged in the different foods of daily use as to separate such foods into two classes — the alkali forming foods, and the acid forming foods. For convenience the more important foods are classified below:

Acid Forming	Alkali Forming
Alcoholic beverages	Apples
Bread, *Chapati*	Apricots
Cereals (wheat, oats, rice, corn)	Asparagus
Cheese	Bananas (ripe)
Chocolate	Beets
Coffee and tea	Cabbage, Cauliflower
Confectionary	Carrots
Eggs	Celery
Fish	Cherries
Flavoured soda waters	Cucumbers
Flesh food of all kinds	Currants, Dates & Figs
Fowl	Grapes
Fried and *ghee*-cooked foods	Green leafy vegetables
Fruits in syrups	Melon

Hydrogenated oils	Milk when uncooked
Lard	Olives (ripe)
Legumes	Onions
Milk puddings	Oranges
Milk when boiled	Peas when fresh green
Nuts	Pumpkins
Refined sugar	Radishes
Sweets	Tomatoes

Do you desire discovering if you have an acidic tendency?
If so, then answer the following questions under 'Alkali effects' and 'Acid effect'. Allow yourself a mark of ten for each positive answer under each columns seperately. Total the marks of each column and you will have a fairly accurate gauge if you have acid tendencies or alkali.

Acid Effects	**Alkali Effects**
Having local infection, in teeth, tonsils, nose or elsewhere	No known local infection
Smoker	Non-smoker
Using alcohol	Non-user of alcohol
Heavy protein diet	Low protein diet (2½ oz or 71 g) daily
Heavy starch consumption (more than one serving daily of bread, porridge, rice, cereals, *chapati)*	Sparing use of starchy food (bread, *chapati,* rice, oat meal, toast, sweets)
Foods cooked in fats or fried	No fried foods
Sparing use of fresh fruits	One fruit meal daily
Scant use of green vegetables	Abundant use of raw and cooked green vegetables
Drink little water	Drink several glasses water daily
Constipated	Two or three bowel movements daily
Using Aspirin and other drugs	Never use Aspirin or similar drugs
Given to worry and anger	Hardly ever worried or become angry
Little outdoor exercise	Regular outdoor exercise
Frequent late nights	Retire early & secure full night sleep

A good concept of the acid process within the body can be gained from the quantity of acid waste substances which are constantly being eliminated.

Thirty quarts of carbonic acid gas (carbon dioxide) is normally eliminated by the lungs every hour. All this quantity of acid gas is largely the result of digesting the sugar, starch, fat and protein of the daily food intake. If the meals contain an excess of these carbonic acid forming substances there is a heavier tax on elimination. Sedentary habits with 'good feeding' may easily overburden lung elimination, with resultant chronic acidosis effects.

It is estimated that one-third of the total body acid wastes are disposed of through the lungs. This leaves another two-thirds to be eliminated by kidneys, skin and bowels.

An amount of blood equal to all the blood in the body (six quarts or 5.6 l) passes through the two kidneys every seven minutes for the purpose of eliminating acid waste products of a nature that cannot be eliminated in the form of gas through the lungs.

A test of urinary acidity is a very good index to body acidity. This should be done at frequent intervals as a check upon health standard. Normally the urine is slightly acidic. It is found that persons who are producing an excess of acid may have a urine reaction showing from 100 to 1000 times as acid as the blood.

Such excessive strain on the eliminative function of the kidneys will result in disease of these organs.

30

What and How Much to Eat?

Dr H.C. Menkel

There are diseases consequent to excessive eating, too frequent meals, and the over-indulgence of concentrated starches, sugars and proteins. To avoid them there are certain axioms which should be borne in mind. Only a certain definite quantity of food material can be appropriated by the body organism during any given 24-hour day. This required quantity for an average person of about 150 lbs (68 kg) weight has been ascertained to be approximately:

Required Quantity of Food Elements for an Average Person

Food elements	Quantity
Starch & sugar	12 oz or 340 g
Protein	2½ oz or 71 g
Fats	2 oz or 56 g
Roughage/Fibre	Suitable quantity
Organic salts	Adequate amount
Vitamins	Small but essential quantity

The above six classes of food elements are provided by nature in the form of rice, wheat, *dhall,* vegetables, nuts, fruit and milk. The digestion of these requires *at least fourteen hours* in a normal individual. In a subnormal individual it will require more time.

The digestion of food is a physical and chemical process requiring expenditure of a considerable quantity of energy. It has been estimated that three meals daily require more energy for digestion, oxidation and elimination than is expended in any other form of average work or play. Three or more meals daily means keeping all body tissues and organs constantly at work without any period of rest, repair and recharging the vital batteries.

This continual strain results in organic exhaustion and needs a regular recurring fast period. The fast is not a prolonged fast, but a regular planned part of daily regime, one or two rest periods between meals, or sufficient length to promote reconstruction and health building. *This will require less than three meals during the twenty-four hours.* For the average invalid or below par individual, two meals well digested with plenty of rest period between will promote recovery far better than three meals. Still other would do better on only one meal daily, as this is all they can really digest and assimilate. Begin by dropping first one daily meal. After a few days drop another, until you have reduced the number of meals to two. But do not make the mistake of eating as much in those two meals as you ate before reducing the frequency of eating.

31

Disease and its Cure

Barring unusual accidents or strong hereditary transmissions, the major cause for ill-health is violation of nature's laws. Drugs never cure. The best that any such so-called remedy can do is to contribute some mineral element, vitamin, enzyme, hormone, or some other factor which nature can utilize for the emergency. All of what we may call essential medicine are contained in our natural foods.

Col. Robert McCarrison, in a paper read before the Far Eastern Association of Tropical Medicine, stated that 'the most fundamental of all rules for the physician' was 'that the right kind of food is the most important single factor in the promotion of health, and the wrong kind of food the most important single factor in the promotion of disease.'

Many of the diseases can be cured by altering our diet and methods of cooking our food which destroy much of the vitamins and mineral elements originally present in our food. The diseases resulting from bad food can be prevented and cured only by the use of less cooked food and more raw fruits, green uncooked vegetables and sprouted pulses, and by learning to use more freshly ground whole wheat flour instead of polished and stored rice.

Diseases Due to Deficiency

Vitamins/ Minerals	Deficiency Symptoms
Vit A	Loss of appetite, physical weakness, diseases of eyes, ears, kidneys, lungs, skin, bladder, stomach and colon, pyorrhoea, anaemia.
Vit B	Indigestion, constipation, loss of weight and vigour, paralysis of muscle groups, neuritis, glandular and endocrine disturbance including thyroid, adrenals, liver and pancreas.
Vit C	Loss of weight and weakness, rapid heart rate, shallow rapid breathing, bleeds easily, low red blood count, teeth decay easily and become brittle, pyorrhoea, heart and blood vessel disease, scurvy.
Vit D	Unstable nervous system, low resistance to tuberculosis and infections, deformed bones, rickets.
Vit E	Anaemia due to inability to digest the food iron, failure of placental function thus affects child-birth.
Organic Salts, Sodium	Diabetes, disturbed bile secretion, flatulence with indigestion, constipation.
Potassium	Defective growth with impaired glycogen function of the liver, low red blood cell formation, spleen function impaired, low nerve energy.
Calcium and Magnesium	In nature calcium is always accompanied by magnesium. A number of childhood diseases involving tissue changes and development are due to deficiency of these combined elements.
Iron	Good blood with all its vital consequences can only be formed in the presence of organic iron compounds.

The following table will provide a ready reference to the more important regulating food factors:

of Vitamins/Minerals

Food Sources

Whole milk, butter, cheese, egg yolk, yellow corn *(bhuta)*, yellow sweet potatoes *(shakarkandi),* carrots and other naturally yellow, and green coloured foods, fish oil — destroyed by cooking.

Whole grain cereals, milk, buttermilk, green peas and legumes, *dhall,* raw fruits, vegetables, egg yolk, honey, yeast, marmite — destroyed by cooking.

Oranges, lemons, tomatoes, guavas, leeches, mangoes, pineapples, chillies, sprouted grams, green leafy raw vegetables, potatoes, cabbage and milk — destroyed by cooking.

Egg yolk, whole milk, fish oils. Few foods contain this vitamin, but it Exposure to direct sunlight.

Whole grain cereals, milk, green vegetables and raw fruits.

Fresh fruits and vegetables. Sodium is necessary to render lime and magnesia soluble for assimilation.

Vegetables and cereals. Muscle tissue.

Fruits, vegetables and cereals. The green leaves contain relatively more calcium, while the seeds contain relatively more magnesium, Nuts, milk, yolk of eggs.

Green leafy vegetables, onions, radishes, carrots, strawberries, tomatoes, dates, apples, figs, coconuts, walnuts, bran of rice and wheat, pulses, yolk of egg, milk.

32

Avoid Wrong Combinations

(This instructive article by Dr. H.C. Menkel was first published in 'Oriental Watchman and Herald of Health', *published by the Oriental Watchman Publishing House, Pune and reproduced in the February 22, 1936 issue of* Harijan.)

A modified form of mono-diet is useful in some circumstances as a therapeutic measure. This may be accomplished by eating only one kind of food at a meal but varying the food with each meal to avoid monotony and still provide needed factors found in different foods. For persons with impaired nutritional function, this regime permits the digestive organs to give full attention to the digestion of the one food partaken during that meal. It also encourages better mastication and discourages overeating.

It is not well to eat fruit and vegetables at the same meal. If the digestion is feeble, the use of both will often cause distress, and inability to put forth mental effort. It is better to have the fruit at one meal, and the vegetables at another.

The plan here suggested of allowing each meal to dominate in one distinctive type of food can, with advantage, be extended beyond the two examples mentioned. A favourable plan is to divide the daily food ration into one protein meal, one starch meal, and one fruit meal.

Starch-containing foods require the fullest possible action of the alkali saliva for their digestion. Therefore such foods should be retained in the mouth and masticated until quite dissolved and reduced to a semi-liquid state. Each mouthful of starch food should receive this treatment which is not difficult after one has formed the habit of thorough mastication.

For this reason it is advisable to recommend taking one's starch requirement at one meal during the day, and refraining from introducing any form of acid food or acid-containing combination of food at that meal. Such combinations as follows are to be avoided:

Food Combinations to be Avoided

1. Tomato sandwiches.
2. Tomatoes with potatoes.
3. Tomatoes and rice or breads.
4. Macaroni with tomatoes.
5. Orange and corn flour pudding.
6. Orange juice and bread, rice, potatoes or banana.
7. Vinegar, *chutni* or pickles with any starchy food like rice or potatoes.
8. Marmalade or jam made of acid fruits, with bread or cake.
9. Tea with bread, cakes, or other starch foods.

Favourable Food Combinations

In our experience at the Simla Sanitarium we have observed that the foods which combine best and cause the least trouble during their combined digestion are:

1. Fruits and milk.
2. Bread, *chapati* or porridge cereals with butter or cream, may be combined with any one or two of the: bananas, almonds, dates, figs, sweet raisins, honey, milk. Any three of these would make a good combination.
3. Bread, *chapatis,* porridge or rice will also combine with vegetables and *dhall* but none of the above fruits should then be used.
4. Rice with tuber and green vegetables, *dhall* and olive oil.
5. Green leafy vegetables, both raw and cooked, combine well with such protein food as fish, fowl, eggs or meat, if one is using animal foods.
6. Flesh foods combine best with green leafy vegetables, but they will also combine well with acid fruits as apples, guavas, pears, oranges, mangoes, but is best not to use both vegetables and acid fruit at the same meal with meat.

33

Polished vs. Unpolished Rice

Human greed, which takes no count of the health or the wealth of the people who come under its heels, is responsible for the rice-mills one sees in all the rice-producing tracts. If public opinion was strong, it will make rice-mills an impossibility by simply insisting on unpolished rice and appealing to the owners of rice-mills to stop a traffic that undermines the health of a whole nation and robs the poor people of an honest means of livelihood.

But who will listen to the testimony of a mere layman on the question of food values? I, therefore, give below an extract from *The New Knowledge of Nutrition* by Mr. Collum and Simmonds which a medical friend, to whom I had appealed for help, has sent with his approbation:

'Rice is the most important cereal grain in the diet of more than half of the human race. It is used especially in the wettest parts of the world. It has never found much favour in the United States but is used in small amounts. Among primitive people rice is eaten without polishing, in which form it is known as red rice, but it is usually treated so as to lose a large part of its germ. This loss results from the pounding of the kernels in rude mortars. The bran layer, which is richer in mineral salts the endosperm of the seed, is retained in this process.

'Rice which is used for export and for sale in the large cities at some distance from the place of production is polished by abrasion. The abrasive action results in wearing away the bran and germ. This mixture is known as rice polishings. The germ of rice, like that of wheat or maize, consists of cellular structures which are the seat of protoplasmic activity, and is a more complete food than any other part of the kernel. It contains almost all the fats found in the grain, and is more efficient in nourshing insects as well as higher animals, than is the polished grain. Unpolished rice loses its flavour owing to the fats becoming rancid when kept for considerable periods in a warm climate. Polished rice can be handled without commercial hazard.

'The practice of polishing rice had its origin in the desire to improve its keeping quality, and the incidental whitening of the kernels has led to the establishment of a demand for a white product. This and the artificially established liking for white flour and white corn meal, is an illustration of the failure of the instinct of man to serve as a safe guide in the selection of food. The aesthetic appeal to a great measure leads to lowest biologic values in food.

'Attractiveness of rice to the eye is so important commercially that the practice of artificial whitening of the polished kernels has come into vogue. This is accompanied by coating the kernels with talcum powder, the latter adhering by means of a thin coating of glucose. The milky appearance of the water in which rice is washed is due to the talcum remaining in suspension. Rice which has been polished, but not coated in this way, is called brown rice as contrasted with the coated or white rice.'

34

Wheat

Wheat is the most important of cereal foods in India. The wheat grain consists of bran or outer envelope, mainly composed of cellulose, the kernel consisting of starch and the germ consisting of soluble starch, protein and some fat.

In the process of milling, the germ and the bran are rejected, and with it undoubtedly are discarded some of the most useful chemical constituents of the wheat, for, with the germ a considerable amount of protein and fat are lost, and with the bran are lost mineral matter as well as some protein. The recognition of this has led to some process during milling to prevent it, but the wheatmeal ground in the mills is never so rich in these ingredients as the whole wheatmeal flour ground in the indigenous *chakki*. The latter consists of all the three ingredients, i.e., the bran, the kernel and the germ and is hence superior in nutritive value, besides being cheaper and more readily available to the poor people in the countryside.

35

Soya Beans

As soya beans are claimed to possess high nutritive value, I reproduce the following from pamphlet No. 7 published by the Bombay Presidency Baby and Health Week Association to enable the food reformer to make experiments:

Generally speaking, yellow beans are the richest in protein and fat, especially in the latter; then come green beans, with black beans last. Farmers in any part of the world who take up the cultivation of the soya beans should therefore grow the yellow beans in preference to others.

The soya bean is one of the most important articles of diet. It contains far more proteins than any grain or pulse seed known so far. It has as much as 40 per cent proteins, i.e. 2 times more than in pulses and beans, 3 times more than in wheat, and 5 times more than in rice.

Its proteins are of high biological value as they contain all the important amino-acids; particularly, glycine, trypto-phane and lycine. In fact, the protein of soya beans is similar to that found in cow's milk and animal foods. It is a boon to vegetarians as its protein resembles animal protein. Soya bean oil contains a large amount of lecithin and vitamins A and D and in this respect it resembles butter. Lecithin of soya beans is identical with that of yolk of eggs.

Soya bean is one of the few seeds containing three vitamins A, B and D, which are indispensable in a staple food consumed by mankind.

The mineral salts in soya beans are far more than in many other seeds and they consist mostly of phosphates and calcium. It can therefore be used to great advantage for the cure of nervous diseases.

Soya beans are on account of their low starchy content (only 24 per cent) very important in the dietary of diabetic patients. Modern researches in diabetic dietary recognize the importance of a carbohydrate equivalent containing starch in small proportion. Soya beans fulfil this condition.

To prepare soya bean coffee the beans are roasted like coffee beans and ground to a fine powder for use.

Soya Bean Flour

The soya beans are dried in the sun for two days. It becomes now easy to make its pulse. All the small particles of the pulse should be included in the pulse and *only the thin husk should be thrown away.* The pulse should be mixed with rice or wheat or *bajra* in the proportion of one part of soya pulse to 6 or 8 parts of other grains for the preparation of rotis or *puris* in the way.

The soya bean is not generally used by itself but as an addition to other foods. Our food then becomes richer in proteins, fats and salts which is a great advantage to vegetarians.

Soya Bean Recipes

[A friend who is now in America sends the following recipes — Ed.]

1. Scalloped Green Soya Beans: 3 cups green soya beans (or dried soaked soya beans), water, 3 cups fresh milk, 6 tablespoons butter or *ghee,* 6 tablespoons wheat flour, one teaspoon salt, pepper to taste, one cup buttered bread crumbs.

Steam or boil the beans until tender. Heat the milk and thicken with the combined *ghee* and flour. Add this to the beans with the seasonings. Place in a greased baking dish, cover with the bread crumbs, and bake until the mixture is heated through and the crumbs are brown. Tomatoes served with this dish make a good combination.

2. Soya Bean Salad: One cup cooked soya beans, ½ cup diced celery or *mooli ki gandar,* ½ cup diced cottage cheese, ½ cup diced carrots, 1 teaspoon finely minced onions, ½ cup freshly prepared tomato juice. Chill thoroughly and serve on crisp lettuce or cabbage.

3. Soya Bean Vegetable Soup: ½ cup chopped celery (we can use spinach), 4 teaspoons chopped onion, 3 cups water, 2 cups fresh tomatoes, one tablespoon salt, pepper to taste, 2 tablespoons wheat flour. Cook the celery or spinach and onion in water for about 15 minutes. Add the tomatoes, the soya bean pulp and the seasonings. Mix the flour with a little cold water, stir into the mixture until thickened and boil for 5 minutes longer.

Soya Bean Sprouts: Soya bean sprouts may be used either raw or cooked in salads. The soya beans can be sprouted in a flower pot, or any container which has holes in it for drainage and which can be covered in case of strong sunlight or snow. The container should be large enough, for as the beans *sprout they* *swell to at least six times their original bulk.* Soak them overnight and next day put them in the container, cover, and leave them in a warm place. The beans must be moistened at least twice a day during the sprouting period which will be 6 to 10 days. But fully grown sprouts will take nearly 15 to 20 days.

There can be another method of sprouting these beans which can be tried. They should be spread one layer thick on a wet cloth and then should be covered with a heavy wet dark-coloured cloth which should be kept damp by frequent sprinkling.

Yellow seeded varieties of soya bean are the best to use for making soya bean milk and there are two methods of making this milk that I have noted here:

1. Wash the soya bean and soak overnight. Remove the skins and grind the beans very fine. Put the ground beans in a cheese cloth bag, in a bowl of lukewarm water, using 3 quarts (2.9 l) of water to each pound (453.60 g) of dried beans. Work thoroughly with the hands for 5 to 10 minutes. Wring the bag of pulp until dry. This milky emulsion thus obtained should be boiled on a low fire for 30 minutes, stirring frequently to prevent scorching. Add sugar and salt to taste. Keep in cold place.

2. Wash the soya beans. Let them dry thoroughly, crack them, then grind them fine. To each pound (453.60 g) of beans add 3 quarts (2.9 l) of water, and soak for two hours. Then boil for 20 minutes, stirring constantly, then strain through a cloth. Add sugar and salt to taste. Keep in a cold place.

After separating the liquid from the solid material, the residue is still very rich in nutritive substances and can be dried and used for cattle food or made into flour for human food.

Soya Bean Cheese (Tofu): This cheese-like preparation of soya bean milk I found in Chinese and Japanese restaurants. It is called tofu. Tofu is used in soups and salads and in other great varieties of Japanese and Chinese cookery. The method of its preparation is as follows:

Prepare soya milk as described above. When it is boiled add magnesium of lactic acid or one-half per cent solution of citric acid in proportion to one-fifth of the volume of milk, stirring all the time. This milky emulsion soon becomes a greyish white curd which should be strained through a cloth to let out the yellowish water liquid. Then dip the cloth in cold water several times to wash away the excess acid. Drain for about an hour and press out the remaining liquid. Season with salt and store in a cold place until firm enough to cut.

Soya Bean Oil: In addition to their food value, soya beans contain a valuable oil which is utilized to a very considerable extent in North America. In Manchuria, it is said, the soya bean is largely grown for oil and meal and is always relied upon by the Manchurian farmer as a cash crop. There are different processes or methods that can be used in the manufacture of oil from the soya bean. It is said that one of the principal uses of soya bean oil in China is food. Other trade uses of soya bean oil are in the manufacture of varnish, printing ink, paints, candles, water-proof goods, and for lighting lubricating and rubber substitutes.

36

Plea for more Fruits

Dr H.C. Menkel

(The following are extracts of Dr H.C. Menkel's comments published in The Oriental Watchman *in response to what Gandhi had written in the* Harijan *dated January 25, 1942 and Gandhi's subsequent acknowledgement of Dr Menkel's article.)*

Mr. Gandhi suggests that an ounce (28.4 g) or two (56.7 g) of raw salad vegetables is worth eight ounces (226.8 g) of cooked vegetables. This applies particularly to their vitamin and mineral values. There is also something vital in raw fruit and vegetable which is destroyed by cooking. For this reason it is desirable that some uncooked raw fruit and vegetables be taken daily. India needs to make more extensive use of such raw uncooked foods. The elimination of sweet dishes as advocated would greatly relieve the stress upon the pancreas and liver imposed by the average Indian diet, and thus reduce the incidence of diabetes.

It is in regard to Mr. Gandhi's statement about fruit that we do not find ourselves quite in agreement. He writes: 'Fresh fruit is good to eat, but only a little is necessary to give tone to the system.' While we can hobble along on low power with little fruit in the diet, it is the contrary that is required. Because so little fruit is available and consumed by the population, that there is so much vitamin and mineral deficiency in India.

Writing about fruits and berries in his book *Food,* Sir Robert McCarrison states: 'They are among the best of all foodstuffs and *should form a considerable part of our daily diet.* They contain much mineral salts of the alkaline kind which keep the blood pure and prevent it becoming acid and sour. Fruits are most useful in keeping the bowels healthy and active.'

Man's physical structure indicates that he is intended to be a frugivorous creature. His natural food, the food on which he can be at his best, is fruit, nuts, milk and the more succulent vegetables.

Cereals would be better introduced as additional rather than as basic to the diet because of their strongly acid-ash-forming tendency. On the other hand, as stated by Sir Robert McCarrison, the fruits and vegetables are rich in the alkali minerals.

The importance of this difference will be recognized when it is recalled that most of our ailments and all our pains, except those due to accident, are of acid origin. Obviously there would be less pain, and more enjoyment of life, if we kept more definitely on the alkaline side. This necessitates more fruit and vegetables, with proportionately less of the acid-tending cereals. The normal proportion is four parts of the alkaline — fruit and vegetables — to one of acid, which includes all other foods. This would be the diet of health economy, and should be made economically within the reach of all, in a well-organized world. Under existing emergency Mr. Gandhi has advocated very rational and possible food economy. His suggestions merit careful study and application.'

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While I appreciate Dr. Menkel's endorsement of my remarks, I like better his correction of my apparent lukewarmness about fruit. No one perhaps, as far as I know, has eaten as much fruit as I have, having lived for six years entirely on fruits and nuts and always having had a liberal supply of fruit as part of my ordinary diet. But I had in my mind, when writing, the special conditions of India. Its people should have, by reason of its extent and variety of climate, a most liberal supply of fruits, vegetables and milk. Yet it is the poorest country in this respect. I therefore suggested what seemed to me to be feasible. But I heartily endorse the proposition that for retaining health fresh fruit and fresh vegetables should form the main part of our diet. It is for the medical profession to study the peculiar condition of India and suggest the list of vegetables and fruit which are or can be easily and cheaply grown in the villages for local consumption. Wild berries, for instance, grow abundantly. They may not be taken to the market for sale but can be used for the picking. This is a vast field for research. It can bring neither money nor perhaps fame. But it may earn the gratitude of dumb millions.

37

The Merits of *Amla*

Vitamin C or ascorbic acid, the vitamin which prevents scurvy, is found in fresh fruits and vegetables. Among vegetables, the green leafy varieties are the best sources. When pulses and cereal grains are allowed to sprout vitamin C is formed in the grain and in the growing green sprouts.

Amla (Indian gooseberry) grows abundantly in all Indian forests and is obtainable in almost unlimited quantities from January to April. The fresh juice contains nearly twenty times as much vitamin C as orange juice, and a single fruit is equivalent in vitamin C content to one or two oranges. It is possible to preserve *amla* without losing much of the vitamin, for unlike other fresh fruits or vegetables it contains substances which practically protect the vitamin from destruction of heating and drying.

Amla is included as an ingredient in many Ayurvedic medicines and tonics. It was found to be a most effective cure for scurvy in 1940 in the Hissar famine area. The above useful information is gleaned from *The Indian Medical Gazette* of March 1942.

38

Nira[1] — A Nutritious Beverage

Nira, the sweet unfermented fresh juice, either of coconut, date, palmyra or sago palm, has been a popular beverage in some parts of our country since times immemorial. On account of ignorance of its nutritive value the people have not yet realized its dietetic importance. On the contrary some of them belonging to the literate class, believing hearsay, consider *nira* to be a deleterious drink. Others having curious conceptions about intoxicating drinks dislike it and would not help to popularize it as a national drink. They confuse it with toddy which is decidedly intoxicating. They little realize that *nira* benefits the addict and the abstainer alike. The fresh juice of the sugar-cane is a fashionable drink all over the country. But sugar-cane juice can become fermented like *nira*. A comparison of *nira* with sugar-cane juice from a nutritive point of view will help to remove misapprehensions about *nira*. No less an authority than the Director of Nutrition Research Laboratory, Indian Research Fund Association, (Coonoor S.I.), has made the following analysis of the two beverages:

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[1] See also Chapter 7: Intoxicants on page 44.

Components	Nira Juice	Sugar-cane
Moisture	84.72%	75.9%
Protein	0.10%	1.4%
Fat	0.17%	0.6%
Mineral Matter	0.66%	0.3%
Carbohydrates	14.35%	21.8%

Nira also contains 0.149% calcium, 0.011% phosphorous and 0.26% iron.

Medicinal Uses of Nira

In the *Indian Materia Medica* by K.M. Nadkarni, the following information is given about the *nira* of each kind of palm besides its valuable use as a raw material for *gur*-making.

Coconut Nira: The unfermented juice taken twice or thrice weekly during pregnancy is said to have marked effect on the colour of the infant: it is said to be born of a fair complexion; i.e. if of dark parents, comparatively fair; if of lighter coloured parents, the offspring generally assumes European complexion.

Date Palm: The fresh juice is a cooling beverage.

Palmyra: The palmyra juice is diuretic, cooling, stimulant and antiphlogistic when fresh.

The fresh saccharine juice obtained by excision of the spadix early in the morning is cooling, also acts as a laxative taken regularly for several mornings; it is useful for inflammatory affections and dropsy; also in gastric catarrh and to check hiccup; as diuretic it is useful in gonorrhoea.

Sago: The juice is internally nutritious and aphrodisiac; also laxative.

39

Cow's Milk vs. Buffalo's

(The question whether cow's milk is superior to buffalo's came up for inquiry. Gandhi had addressed friends on the subject and Shri Haribhau Phatak forwarded him a letter from Prof. Rao Bahadur Sahasrabuddhe, which read as follows: — Ed.)

'With regard to your enquiry about the differences between cow milk and buffalo milk, I have to say that the fat and casein of cow milk are more easily digestible than those of buffalo milk. The cow milk has also greater amount of vitamins than buffalo milk. These qualities affect children and adults equally, but an adult can digest buffalo milk while a child cannot. I think this is all that you want.'

He has also received an opinion from Dr. S.K. Apte of Sholapur, Vice-President, Gopalak Sangh, which is reproduced below, the names of those who sent replies themselves being omitted.

'This question whether cow milk is superior to buffalo milk is being discussed during the last three years, and this has had a good effect in attracting public attention to the utility of cow milk. In India, from older writings and age-long belief, it is conceded that cow milk is superior to buffalo milk. The same conclusion can be drawn from the fact that in other countries only cow milk is used. But in this age of science, no theory is taken as accepted until it is proved by demonstrations. It will not do merely to say that cow milk is superior to buffalo milk because our ancestors said so, or other countries use cow milk. The burden of proving that it is superior lies on those who assert so. There are several ways of proving this scientifically.

One way is to compare the merits and demerits of both milks by analysis of their components. It is possible chemically to ascertain the nutritive value of their components. Such an experiment has been made by Prof. Rao Bahadur D.L. Sahasrabuddhe of the Agricultural College, Poona, the details of which he has published in the *Dnyanprakash* of September 9, 1934. He has made it clear therein not only that cow milk is very useful for the nutrition of young children but that buffalo milk is actually harmful to them. Prof. Sahasrabuddhe says:

'The buffalo milk is rich in fat, which children cannot digest. On account of indigestion they suffer from diarrhoea. The acids in the undigested fat draw up salts from the body which are necessary for the building of bones and the lack of which is responsible for rickets. The fats in cow milk and buffalo milk differ from each other in their digestive properties. The percentage of volatile and soluble acids is greater in cow *ghee,* and consequently it is more easily digested.'

The experiment which Prof. Sahasrabuddhe has made also proves that the casein in cow milk is digested in the stomach more easily than that in the buffalo milk. His whole essay is informative and instructive.

The following are the conclusion deducible from the replies:

1. Buffalo milk is injurious to the development of children and only cow milk is, in the absence of mother's milk, useful to them.
2. Cow milk, being easily digestible, is more beneficial to patients than buffalo milk.
3. There is no definite evidence to show that the use of buffalo milk by adults is in any way injurious. Mr. Bruen, the livestock expert to the Government of Bombay, says that buffalo milk is hard to digest by a person of any age, because of the excess fat in buffalo milk.
4. Cow milk is useful for intellectual growth mainly of children. No definite conclusion can be drawn regarding better effect on the intellectual growth of adults.
5. If, instead of rearing up buffaloes, cows are kept in the city, it will produce a beneficial effect on the general hygiene of that city with less expense.'

The experiment that Dr. Apte has suggested is worth making. The question of the comparative merits of the cow and the buffalo is of national importance from many points of view. In no other country in the world do these animals play the part that they do in the life of the nation in India.

40

Skimmed Milk and Buttermilk

(Mahadev Desai had addressed a number of questions to Dr. Aykroyd, Director of Nutrition Research, Coonoor, and to Sjt. Satis Chandra Dasgupta, on the advantages and disadvantages of skimmed milk and about making it popular. Both of them sent their considered opinions which were published in Harijan *of May 29, 1937 and extracts of which are reproduced here — Ed.)*

You ask a number of questions about the nutritive value of separated milk and buttermilk. Separated or skimmed milk is of high nutritive value, since it contains all the valuable elements present in whole milk except fat and vitamin A. Whole milk of good quality is to be preferred to separated milk because it contains vitamin A, but there is no question that the regular consumption of separated milk very greatly improves the health and development of children fed on 'typical' Indian diets based largely on rice or millet, containing no milk or eggs, and small quantities of vegetables. An important advantage of skimmed milk, of course, is that it is cheaper than fresh whole milk.

'Buttermilk' is a term which has several meanings in India. 'Buttermilk' made from curds — i.e., soured milk from which a good proportion of the fat has been removed — has roughly the same nutritive value as separated milk, provided no water is added. If, as often happens, large quantities of water are added to 'buttermilk' of this nature, the resulting product is still called 'buttermilk' but of course its food value has been greatly lowered. A third form of 'buttermilk' is the liquid which separates out when cream is churned into butter. This type of 'buttermilk' is of relatively low nutritive value, since most of the valuable elements remain in the original milk from which the cream was obtained. It should, however, not be wasted, since it has some food value and is better than no milk at all.

One important fact should be borne in mind. Separated or skimmed milk is not suited to form the sole food of infants, it must be supplemented by food rich in vitamin A — e.g. cod-liver oil. It may, however, be used with advantage to supplement the diets of young children past infancy when such diets are largely based on cereals and contain few vegetables and no animal protein. Separated milk in such circumstances is much better than no milk at all. Our experiments have demonstrated its value as a food for older children. It would also be a very useful addition to the diet of expectant and nursing mothers. — *W. R. Aykroyd*

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Buttermilk can be made into *dahi* and sold locally. There is a limited sale for such *dahi* where large quantities of milk are handled. Where there are cheap means of communication such *dahi* is transported to distant places also.

By souring buttermilk with sour *dahi* or acid substances like citric acid or alum the proteins are precipitated. This is *chhana.* It is also obtained by acidifying whole milk. But *chhana* brings down the fats also. *Chhana* from buttermilk is inferior to that from whole milk and sells cheaper. Manufacture of *chhana* is one of the common commercial uses of buttermilk. It can be carried longer distances than *dahi* but fetches less value. The sugar and mineral substances 'C' are left in the water after separation of *chhana.* It is, therefore, less nutritious than buttermilk-*dahi.*

Buttermilk will yield casein which is another form of *chhana.* If there is no demand for *chhana* or *dahi,* casein can be made from buttermilk.

Buttermilk can be best popularized by being condensed and sold as condensed skimmed milk. Condensed milk can be made in cottages. There are difficulties to be overcome in proper packing, but they are not insurmountable.

Buttermilk is a dangerous substance if it or its products are passed off as whole milk. Dishonest persons separate some cream from milk and sell the partially separated milk as whole milk or as whole-milk-*dahi* or whole-milk-*chhana.* The *dahi* or *chhana* of towns is frequently made from milk from which cream has been separated partially.

Chhach is to buttermilk as *dahi* is to whole milk. When butter is taken out of whole-milk-*dahi chhach* is left. When butter or cream is taken out of milk, and the buttermilk is converted into *dahi,* it is equivalent to *chhach.* The appearances of such *dahi,* and *chhach* are different but the substances are same. If buttermilk-*dahi* is churned, it at once takes the appearance of and becomes indistinguishable from and identical with *chhach.*

For making milk-powder from whole milk or buttermilk special vacuum and steam heating machinery are to be used. Milk-powder cannot be made in cottages. — *S.C. Dasgupta*

41

Green Leaves

Take up any modern text-book on food or vitamins, and you would find in it a strong recommendation to take a few edible green leaves uncooked at every meal. Of course, these should always be well washed half a dozen times to remove all dirt.

These leaves are to be had in every village for the trouble of picking. And yet greens are supposed to be only a delicacy of cities. Villagers in many parts of India live on *dhall* and rice or *roti,* and plenty of chillies, which harm the system. Since the economic reorganization of villages has been commenced with food reform, it is necessary to find out the simplest and cheapest food that would enable villagers to regain lost health. The addition of green leaves to their meals will enable villagers to avoid many diseases from which they are now suffering.

The villagers' food is deficient in vitamins; many of them can be supplied by fresh green leaves. An eminent English doctor told me in Delhi that a proper use of green leaves was calculated to revolutionize the customary notions of food and that much of what was today being supplied by milk might be supplied by green leaves. That, of course, means elaborate research and examination in detail of the nourishing properties of the innumerable leaves that are to be found hidden among the grasses that grow wild in India.

For nearly five months I have been living entirely on uncooked foods. I used to take what appeared to me an enormous quantity of a vegetable everyday. For the past five months I have been taking green leaves in the place of cooked leaves or other vegetables. It then seemed to me monstrous that I should have to depend upon the Wardha bazar for the few ounces of leaves I needed. One fine morning Sjt. Chhotelalji of the Wardha Ashram brought to me a leaf that was growing wild among the Ashram grasses. It was *luni.* I tried it, and it agreed with me. Another day he brought *chakwat.* That also agreed.

Since then, I have been introduced to the leaves of *sarsav, suva,* turnip-tops, carrot-tops, radish-tops and pea plant leaves. Besides these, it is hardly necessary to state that the radish, turnip and carrot tubers are also known to be edible in their raw state. It is waste of money and 'good' taste to cook these leaves or tubers. The vitamins contained in these vegetables are wholly or partially lost in cooking. I have called cooking these waste of 'good' taste, because the uncooked vegetables have a natural good taste of their own which is destroyed by cooking.

Neem Leaves and Tamarind

In answer to certain questions Dr. Aykroyd, Director of Nutrition Research, sends the following interesting replies:

'We have analysed *neem* leaves in the laboratory. As compared with a number of other green vegetables previously investigated. They have a high nutritive value. Both mature and tender leaves are rich in protein, calcium, iron and vitamin A activity and are superior in these respect to amaranth leaves, corriander leaves, and spinach. This perhaps explains the tradition of their high nutritive value. I believe that modern laboratory investigations in China have not infrequently demonstrated that herbs and other types of food recommended in ancient Chinese books are rich in vitamins, etc.

'With regard to vitamin content, tamarind and lemon are roughly similar, except that the latter is richer in the anti-scorbutic vitamin C. Tamarind pulp, unlike lemon, contains a good deal of tartaric acid — about 14 per cent, the chief acid in lemon is citric acid. Otherwise the two fruits resemble each other in food value. Tamarind is stated to contain a laxative principle. I can offer nothing in support of the popular belief that it induces fever and rheumatism.'

The reader should know that I have been making extensive experiment in *neem* leaves and tamarind. *Neem* leaves have been taken with impunity by several. My difficulty has been to make them palatable.

Taken in the form of *chatni* containing sufficient tamarind pulp and salt, or lemon and salt, it is least objectionable. Some take two to three *tolas* (35 g) of whole leaves with relish. I am unable to say definitely what effect the taking of leaves produces on the system. I have been tempting volunteers to try them because of the high merit attributed in Ayurveda to them and because of their decidedly good effect. Their common use would enable the poor people without extra cost to take the green leaves upon which modern diet experts lay much stress. That the use of the leaf produces no ill effect can be stated with perfect confidence.

Of the good effect of tamarind I can write with equal confidence. One ounce (28.3 g) of pulp taken with meals has in several cases induced free movement of bowels. It can be mixed with vegetables or rice or *dhall.* It can be eaten as jam when mixed with sufficient quantity of *gur.* I have used it with beneficial effect for reducing fevers by giving it in the form of tamarind water. In no case have I found it to have induced cold or rheumatism or boils as many people believe it does. There is hardly a man or woman in the south who does not eat tamarind in some shape or form. It is the base for its famous *rasam.*

Village workers will have to find out cheap, effective and harmless substitutes for the expensive yet useful articles one uses in cities and which one cannot get in the villages for love or money. Tamarind and *neem* leaf are such substitutes.

Conclusion

I have now said all that I had intended to say on the subject of health. And now, before finally taking leave of my readers, I will say a word or two on my object in writing these pages.

One question which I have asked myself again and again, in the course of my writings is why I, of all persons, should write on health. Is there any justification at all for one like me, who is no doctor, and whose knowledge of the matters dealt with in these pages must be necessarily imperfect, attempting to write on this subject?

My defence is this. The 'science' of medicine is itself based upon imperfect knowledge, most of it being mere quackery. But this book, at any rate, has been prompted by the purest of motives. The attempt is here made not so much to show how to cure diseases as to point out the means of preventing them. And a little reflection will show that the prevention of disease is a comparatively simple matter, not requiring much specialist knowledge, although it is by no means an easy thing to put these principles into practice. Our object has been to show the unity of origin and treatment of all diseases, so that all people may learn to treat their diseases themselves when they do arise, as they often do, in spite of great care in the observance of the laws of health.

But, after all, why is good health so essential, so anxiously to be sought for? Our ordinary conduct would seem to indicate that we attach little value to health. If health is to be sought for in order that we might indulge in luxury and pleasure, or pride ourselves over our body and regard it as an end in itself, then indeed it would be far better that we should have bodies tainted with bad blood, by fat, and the like.

All religions agree in regarding the human body as an abode of God. Our body has been given to us on the understanding that we should render devoted service to God with its aid. It is our duty to keep it pure and unstained from within as well as from without, so as to render it back to the Giver, when the time comes for it, in the state of purity in which we go it. If we fulfil the terms of the contract to God's satisfaction, He will surely reward us, and make us heirs to immortality.

The bodies of all created beings have been gifted with the same senses, and the same capacity for seeing, hearing, smelling and the like; but the human body is supreme among them all, and hence we call it a 'Chintamani,' or a giver of all good. The body can be of real service only when we realise it to be a temple of God and make use of it for God's worship; otherwise it is no better than a filthy vessel of bones, flesh and blood, and the air and water issuing from it are worse than poison. The things that come out of the body through the pores and other passages are so filthy that we cannot touch them or even think of them without disgust; and it requires very great effort to keep them tolerably clean. Is it not most disgraceful that, for the sake of this body, we should stoop to falsehood and deceit, licentious practices and even worse? Is it not equally shameful that, for the sake of these vices, we should be so anxious to preserve this fragile frame of ours at any cost?

This is the truth of the matter in regard to our body; for the very things which are the best or the most useful have inherent in them capabilities of a corresponding mischief. Otherwise, we should hardly be able to appreciate them at their true worth. The light of the sun, which is the source of our life, and without which we cannot live for an hour, is also capable of burning all things to ashes. So too, a king may do infinite good to his subjects, or be the source of untold mischief. Indeed, the body may be a good servant, but, when it becomes a master, its powers of evil are unlimited.

There is an incessant struggle going on within us between our Soul and Satan for the control of our body. If the soul gains the ascendancy, the body becomes a most potent instrument of good; but, if the devil is victorious in the struggle, it becomes a hot-bed of vice. Hell itself would be preferable to the body which is constantly filled with decaying matter and which emits filthy odours, whose hands and feet are employed in unworthy deeds, whose tongue is employed in eating things that ought not to be eaten or in uttering language that ought not to be uttered, whose eyes are employed in seeing things that ought not be seen, and whose ears are employed in the hearing of things that ought not to be heard. But while hell is never mistaken for heaven by anybody, our body which is rendered worse than hell by ourselves is, strangely enough, regarded by us as almost heavenly! So monstrous is our vanity, and so pitiful our pride, in this matter! Those who make use of a palace as a latrine, or vice versa, must certainly reap the fruit of their folly. So too, it, while our body is really in the Devil's hands, we should fancy that we are enjoying true health, we shall have only ourselves to thank for the terrible consequences that are sure to follow.

To conclude, then our attempt in these pages has been to teach the great truth that perfect health can be attained only by living in obedience to the laws of God, and defying the power of Satan.

True happiness is impossible without true health, and true health is impossible without a rigid control of the palate. All the other senses will automatically come under our control when the palate has been brought under control. And he who has conquered his senses has really conquered the whole world, and he becomes a part of God. We cannot realise Rama by reading the *Ramayana,* or Krishna by reading the *Gita,* or God by reading the *Koran,* or Christ reading the *Bible;* the only means of realising them is by developing a pure and noble character. Character is based on virtuous action, and virtuous action is grounded on Truth. Truth, then, is the source and foundation of all things that are good and great. Hence, a fearless and unflinching pursuit of the ideal of Truth and Righteousness is the key-note of true health as of all else. And if we have succeeded (in however feeble a measure) in bringing this grand fact home to our reader, our object in writing these pages would have been amply fulfilled.

— FINIS —

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Bibliography

Introduction: *A Guide to Health* (Madras: S. Ganesan, 1921)

Preface: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Translator's Note: *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 1: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 2: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 3: *Key to Health* (Gujarat: *Navajivan Trust,* 1948) and *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 4: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 5: *A Guide to Health* (Madras: S. Ganesan, 1921) and *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 6: *Key to Health* (Gujarat: *Navajivan Trust,* 1948) and *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 7: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 8: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 9: *Harijan,* Nov 30, 1935 and *Harijan,* Feb 15, 1936.

Chap 10: *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 11: *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 12: *Harijan,* Jul 27, 1935.

Chap 13: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 14: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 15: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 16: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 17: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 18: *Key to Health* (Gujarat: *Navajivan Trust,* 1948)

Chap 19: *My Experiments with Truth,* 1948. pp. 302-305

Chap 20: *My Experiments with Truth,* 1948. pp. 329-331

Chap 21: *My Experiments with Truth,* 1948. pp. 375-376

Chap 22: *My Experiments with Truth,* 1948. pp. 399-400

Chap 23: *My Experiments with Truth,* 1948. pp. 551-555

Chap 24: *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 25: *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 26: *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 27: *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 28: *A Guide to Health* (Madras: S. Ganesan, 1921)

Chap 29: *Harijan,* Feb 22, 1936

Chap 30: *Harijan,* Mar 21, 1936

Chap 31: *Harijan,* Mar 21, 1936

Chap 32: *Harijan,* Mar 21, 1936

Chap 33: *Harijan,* Oct 26, 1934

Chap 34: *Harijan,* Dec 28, 1934

Chap 35: *Harijan,* Sep 28, 1935; Dec 28, 1935 and Jan 04, 1936

Chap 36: *Harijan,* Mar 15, 1942

Chap 37: *Harijan,* Apr 12, 1942

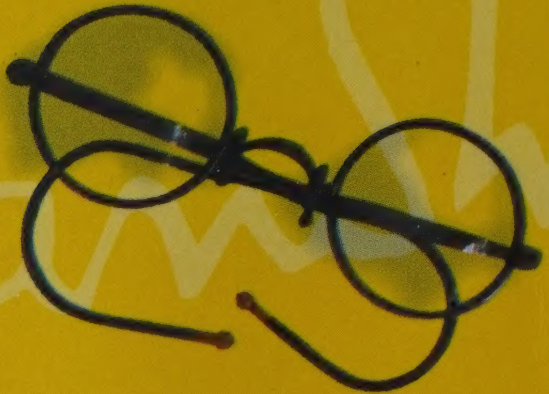
Chap 38: *Harijan,* Jan 07, 1939

Chap 39: *Harijan,* Feb 22, 1935

Chap 40: *Harijan,* May 29, 1937

Chap 41: *Harijan,* Feb 15, 1935 and Nov 16, 1935

Conclusion: *A Guide to Health* (Madras: S Ganesan, 1921), Jun 19, 1937



Healthy Living

According to **Gandhi**

A discerning selection of thematic essays on health & sustainable wellness by one of the truly great figures of the twentieth century.

True health is a balanced state of physical, emotional, spiritual, mental and social well-being attained only by living in obedience to the laws of Nature.

Illness is the result not only of our actions but also of our thoughts. More people die out of the fear of disease than the disease itself.

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Ignorance is the root of disease. We often get bewildered at the most ordinary diseases, and in our anxiety to get better simply make matters worse. Our ignorance of the most elementary laws of nature and health leads us to adopt wrong remedies...

> **It is far easier and safer to prevent illness by observing the laws of health than to set about curing it... It is the duty of all thoughtful men to understand aright the laws of health... The object of (this book) is to give an account of these laws. We shall also consider the best methods of cure for some of the most common diseases.**
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